JANUARY 1959

Brick & Clay Record

LEADING CLAY JOURNAL
OF THE WORLD

BRICK • REFRACTORIES • STRUCTURAL TILE • SEWER PIPE • DRAIN TILE • TERRA COTTA • ROOFING TILE • CLAY AGGREGATE

16th Annual Refractories Issue

REFRACTORIES IN THE ROCKET AGE

RESEARCH QUALITY CONTROL IN REFRACTORIES

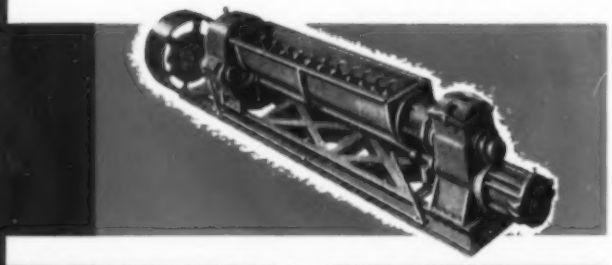
FOR MODERN REFRACTORIES

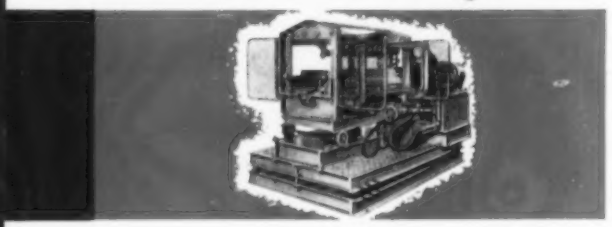
BONNOT *Clay Working* MACHINERY

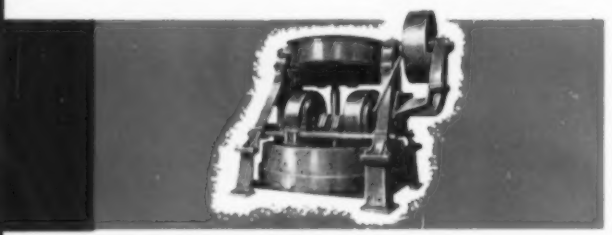
. . . *insures*

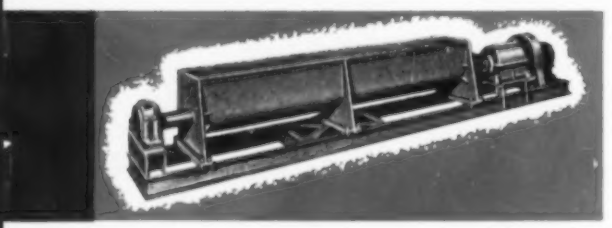
★ HIGHEST QUALITY PRODUCTS
★ GREATEST COST CONTROL
★ SIMPLIFIED MAINTENANCE

"Integrity of performance" is built around "3 fundamentals which 75 years of experience prove are necessary for profitable clay processing." Continuous achievement of these fundamentals at Bonnot, is based on:









Experienced Engineering . . .

that begins with a positive analysis of your local conditions and needs by experienced Bonnot engineers. Your manufacturing—which differs from other plants in product and raw material—requires detailed study to insure equipment that unfailingly delivers to you—**highest quality for highest profit . . . greatest cost control . . . minimum maintenance.**

Superior Manufacturing . . .

that assures you year after year of uninterrupted production. Bonnot equipment is engineered for long wear . . . designed for simplification of maintenance with the advantage of interchangeable components. Quality wearing parts are produced in Bonnot's own foundry with NiHard and other iron alloys. When an emergency arises, you get the services of clay processing specialists.

Advanced Research . . .

in our lab and your plant—has perfected many "clay industry firsts" including production de-airing, frictionless bearings, front end absorption of thrust loads, off-center disc feeders, completely adjustable hydraulic cutters. These and other cost-saving advancements enable you to maintain delivery schedules and reasonable profit returns.

SEND US YOUR SPECIFIC REQUIREMENTS . . .
we'll do the rest . . . PROMPTLY!

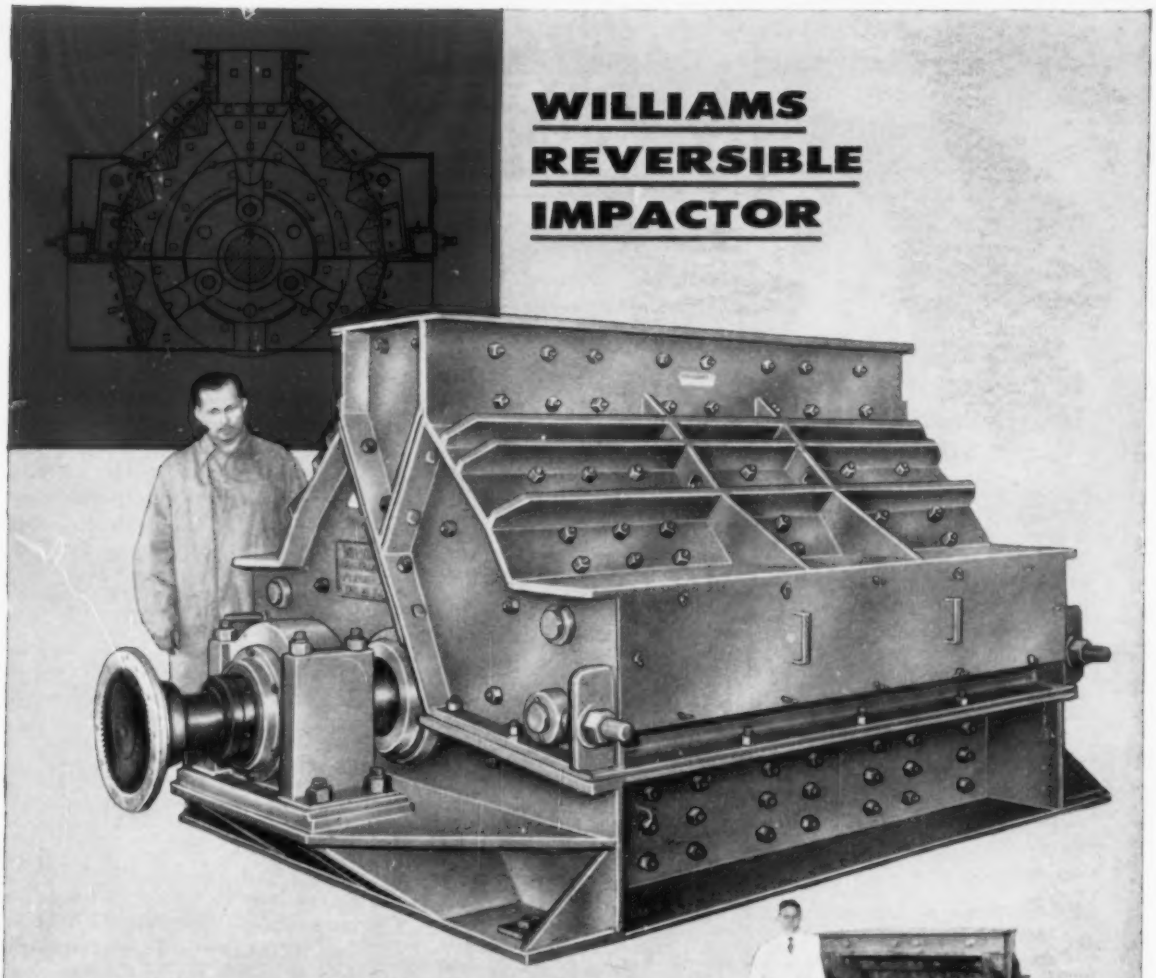
BONNOT'S "Pre-engineered line" already includes

AUGER MACHINES
BALL MILLS
BRICK CUTTERS
BRICK SCRATCHERS
CLAY BLENDERS
CLAY FEEDERS
CLAY GRINDERS
CLAY MIXERS
COMBINED MACHINES
CRUSHERS
CUTTERS, MECHANICAL
CUTTERS, RECIPROCATING
CUTTERS, ROTARY
DE-AIRING, POTTERY
DE-AIRING, BRICK & TILE
DE-AIRING, REFRACTORIES
DE-AIRING, PIPE PRESS
DIES
DRY PANS
FEEDERS, DRY
FEEDERS, WET
GRANULATORS
HAMMER MILLS
MIXERS, DRY OR WET
PUG MILLS, HEAVY
PUG MILLS, POTTERS
PULVERIZERS
REPRESSES
ROTARY DRYERS
TILE CUTTERS
TUBE MILLS
WET PANS

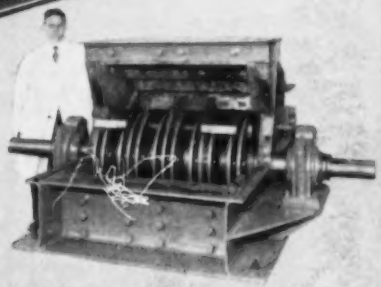
STEP AHEAD WITH BONNOT

The **BONNOT** Co.
CANTON 2, OHIO

WILLIAMS REVERSIBLE IMPACTOR



- 100% Impact Reduction
- No Friction Or Abrasion
- Unobstructed Discharge
- Less Upkeep Expense



Internal view showing manganese steel impact blocks, hammers and liners. Rugged, heavy steel plate construction. Extra large shafts are mounted in oversize bearings sealed in self-aligning housings.

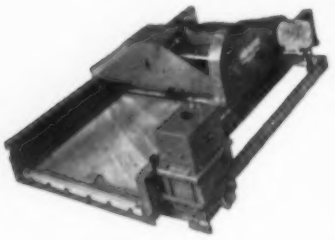
Lower Cost Crushing And Grinding

Will reduce clay and shale direct from the bank to 8, 10 mesh, or finer, for burned ware. Reduces its own screen tailings. 100% impact action permits reduction of abrasive materials with lower upkeep expense. Material falls *between* the hammers which throw it against the impact blocks, setting up a repeated ricochet action and the reduction is entirely by impact with no wearing, abrasive, grinding action thereby lessening wear on parts. Hammers can be rotated in either direction, rotated to the right today, to the left tomorrow thereby giving double hammer life. Impact blocks adjustable for wear and fineness of product. Finished material is discharged freely which further lessens upkeep expense. A size for every job. Describe your work and let us tell you about one for your use.

WILLIAMS PATENT CRUSHER & PULVERIZER CO.
2709 North Broadway **St. Louis 6, Mo.**

WILLIAMS
CRUSHERS GRINDERS SHREDDERS
Oldest and Largest Manufacturers of Hammer Mills in the World

"Brick & Clay Record" is published monthly by Industrial Publications, Inc., 5 S. Wabash, Chicago 3, Ill. Subscription price: U.S.A. and Canada, $5.00 per year; three years, $10.00; Foreign subscription price: $7.00 per year; three years, $15.00. Vol. 134, No. 1. Second Class postage paid at Pontiac, Illinois and at additional mailing offices.



This Sturdy Screen Takes Heavy Clays In Stride

For accurate, efficient screening of damp clays and shales, the Leahy® NO-BLIND® vibrating screen with FlexElex® jacket heating is unmatched. No other screen has all of these advantages:

- **Differential Vibration** snaps wedging particles loose 1600 times per minute.
- **FlexElex heating** keeps the mesh dry and wide open for accurate, full capacity production.
- **Direct runs of laminated bus bars** connect the outboard transformer with the jacket while eliminating bothersome flexible connectors.
- **Screen jackets change** easily and quickly without breaking and remaking separate electrical connections.

For full information, send for Bulletin 16-EH.

THE Leahy SCREEN
NO-BLIND VIBRATING
— offers —
INTEGRATED HEAT SCREENING

THE DEISTER CONCENTRATOR COMPANY
The Original Deister Co., Est. 1906
913 GLASGOW AVE. FORT WAYNE, IND.

LETTERS To the Editor

Modifiers Comments

(Ed. Note—Printed below are representative comments from readers concerning the November Clay Modifiers issue of B&CR.)

. . . I want you to know that I was very much impressed. We expect to preserve this issue as our reference source on this matter and I want to compliment you for the very fine efforts your organization put forth in publishing this issue.

P. B. Belden Jr., Pres.
Belden Brick Co.
Canton, Ohio

Your section on Clay Modifiers is quite a worthwhile "encylopedia" on the subject. Clay plant operators should find it excellent as a reference to be preserved for future use.

O. J. Whittemore
Vincent Clay Products Co.
Fort Dodge, Iowa

The subject material is very worthwhile and should offer many possibilities to the alert plant operator. As a user of barium carbonate, this part was of particular interest. As several methods of adding barium are offered, we are left wondering which produces the best results?. . . BRICK & CLAY RECORD should be congratulated for this very good coverage of Clay Modifiers.

William C. Cress
Ceramic Engineer
Ochs Brick & Tile Co.
Springfield, Minn.

. . . .Our reaction was definitely favorable regarding your article on clay body conditioners, coloring agents, etc. I am sure that some of our plant men particularly will be able to make use of some of this information.

As you probably know, we people at Streator have been mixing clays and various admixtures, both for conditioning clays and for producing various color effects, for many years. I think it is good that the brickmakers learn to make their brick of better quality and more attractive appearance.

H. J. Schaefer, Mgr.
Streator Brick Co. Div.
Hydraulic Press Brick Co.
Streator, Ill.

. . .One of the best features of things like this is that it sums up the benefits of the additive thoroughly and briefly enough to be readily usable. We have some new supervisory personnel here at our plant and I am insisting that they read this section over carefully as it can give them a far better picture of the many conditions for which an additive is available.

This article is one of the reasons for my recently increasing our subscription to three copies instead of the usual single copy. . .

S. E. Patek
Midland Brick & Tile Co.
Chillicothe, Mo.

You are to be commended for gathering and presenting the material on Clay Modifiers. We are constantly on the search for new colors, new textures, new treatments, and I believe it is helpful to have some of the basic ideas reviewed and presented as it was done in the November issue of the "Record."

Everything possible should be done to stimulate clay products manufacturers to experiment with colors, new textures and new treatments of structural clay products.

C. T. Bridgman
Engineering, Research Dir.
Goodwin Companies
Des Moines, Iowa.

I want to commend you on having Clay Modifiers in your November issue. It is very good and you are to be complimented. I would like for everyone concerned in my organization to have a copy of this issue so will you send me an extra ten copies.

Rudy L. Nordmeyer
Valley Brick & Tile Co.
Mission, Tex.

Brick & Clay Record

CONTENTS

BRICK & CLAY RECORD
5 S. Wabash Ave. Chicago 3, Ill.

Annual Refractories Section 65
Refractories progress in research and quality control reported in pictures, in the work being done by a representative group of companies.

Kalo Brick & Tile 42
Production ideas including how Kalo saves 150 manhours per unloading of tile kilns

Whitaker Visits Russia 46
A report to B&CR readers on the Russian brick industry, from research to methods and machines

Building Tomorrow's Plant Today 45
The second, and concluding, part of an engineer's ideas on plant building, modernizing

Editorial 33
News of the Industry 34
Yard Talk 41
New Products 18
Materials, Equipment, Services 19

BRICK & CLAY RECORD is published monthly by Industrial Publications, Inc., 5 South Wabash, Chicago 3, Ill. Forward all mail—changes of address (with old address and new zone number), orders for subscriptions, renewal orders, un-deliverable copies, etc., to BRICK & CLAY RECORD, at above address.

Subscriptions: U. S. and Canada, single copy, 75c; $5.00 for one year; $10.00 for three years. Foreign rate, $7.00 per year, three years $15.00.

When renewing your subscription to BRICK & CLAY RECORD, it is a good policy to buy on the thrifty 3 year basis. In effect you get one year free.

BRICK & CLAY RECORD
5 South Wabash Chicago 3, Ill.

For
Brick and Refractory Research Labs

FLUORSPAR

- PLASTIC REFRACTORIES
- RAMMING MIXTURES
- BUFF BRICK
- CASTIBLES
- GLAZES

Investigate Fluorspar's Properties:

Prevents green scum in buff bricks

Prevents crazing of glazes

Acts as an auxiliary flux in promoting decreased porosity

Lowers firing temperature

Reduces Thermal expansion

Improve your products quality with this flexible raw material.

Send for free samples and specification data.

MINERVA OIL CO.

Fluorspar Division

Box 531 **Phone—Br 3-2191**

Eldorado, Illinois

Cut Unloading Time in ½ . . .

17 Superlites On the Job at Denver Brick & Pipe Co. Prove Satisfaction

There's no place in a modern operation for the wasteful inefficiency of hand unloading, or even slow hand-operated unloading. With SUPERLITE UNLOADERS, such as the one pictured above (one of 17 on the job at the completely mechanized Denver Brick & Pipe Co.), you can actually cut your delivery time in half. That means twice as many deliveries in one day—each man and each truck doubles efficiency.

SUPERLITES handle gently, too. Proved and approved under all conditions, they can be used on any flat bed truck or trailer regardless of length.

If you WANT to slash your delivery costs by 50% or more, contact us at once—by letter, wire or phone. Collect calls cheerfully accepted!

Fast—Effortless—Economical SUPERLITE UNLOADING

BUILDERS EQUIPMENT COMPANY

3810 NORTH CENTRAL AVENUE
PHOENIX, ARIZONA
Telephone Numbers:
CRestwood 4-8321
CRestwood 4-8431

Aid water penetration with Kimberly-Clark's Additive-A

One of the many ways Additive-A helps you make better bricks more efficiently is by allowing tempering water to penetrate more easily, thus requiring less water—up to 50% less in some cases. Anti-scum chemicals, too, can be greatly reduced or eliminated entirely.

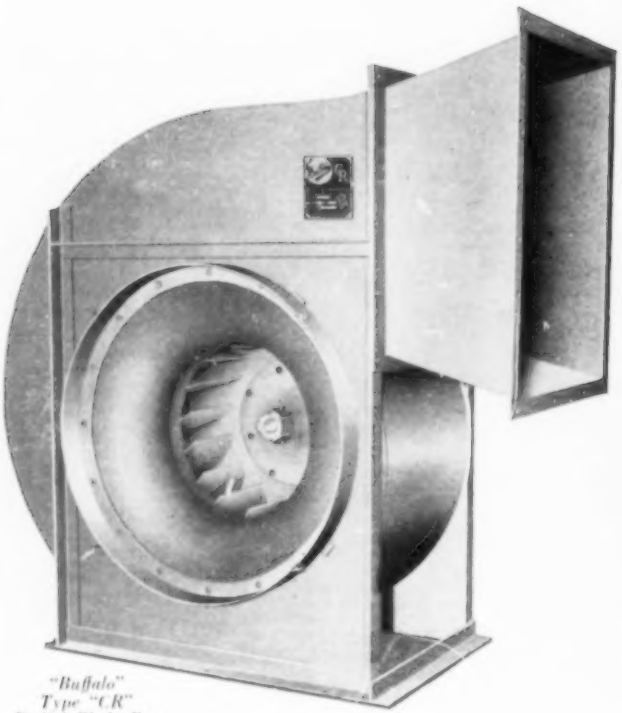
Further advantages of this Kimberly-Clark clay conditioner are:

- Increases green plastic strength
- Improves clay workability
- Upgrades the quality of all ware
- Increases dry green strength
- Permits more even temper
- Controls scumming
- Cuts dryer loss

ADDITIVE-A

Write for descriptive folder, to: **Kimberly-Clark Corporation** • NEENAH, WISCONSIN

CHEMICAL PRODUCTS



"Buffalo"
Type "CR"
Radial Blade Fan

Gradually divergent outlet minimizes turbulence . . . obtains peak static pressure conversion. Result is reduced housing wear, increased efficiency.
Design of the deep die-formed inlet and wheel flange reduces abrasion to a minimum. Mating sections form a true half-circle with no irregularities. Resultant smooth air flow reduces wear, provides top performance.

ABRASION RESISTANCE OF "CR" FAN REDUCES MAINTENANCE-REPLACEMENT COSTS

Where you need a high volume, high pressure fan that will stand up under the most severe heavy-duty industrial jobs, especially where abrasion is a problem, the "CR" will give you the most for your fan dollar.

The "Buffalo" Type "CR" Fan's superior design, heavy gauge construction and painstaking workmanship insure optimum performance during a long life of dependable service. Its high capacity characteristics often permit substitution of a smaller fan for many direct-connected applications. This can save many dollars on initial fan costs.

The "Buffalo" Type "CR" Fan offers many advantages for your most punishing air moving applications. Contact your nearby "Buffalo" engineering representative, or write for Bulletin FD-205.

"Buffalo" Fans give you the exclusive "Q" Factor — the built-in QUALITY that provides trouble-free satisfaction and long life.

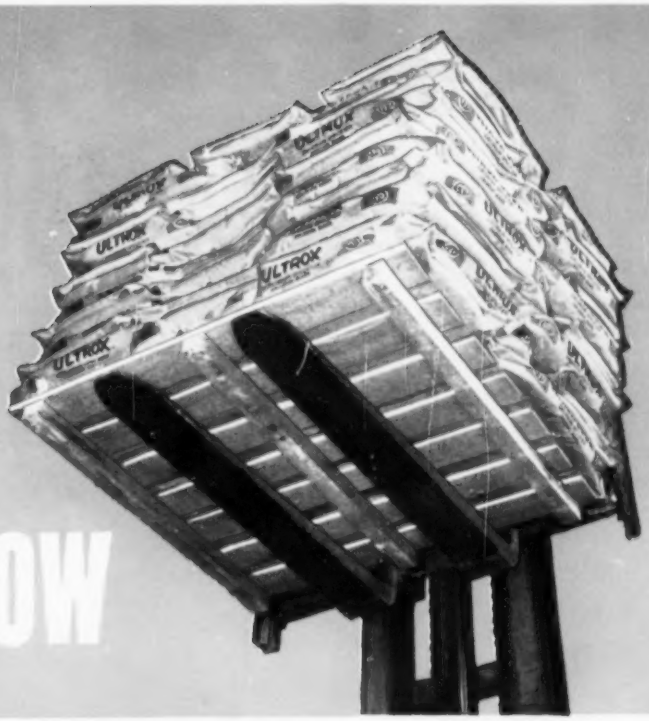
BUFFALO FORGE COMPANY
Buffalo, N. Y.

Buffalo Pumps Division, Buffalo, N. Y.
Canadian Blower & Forge Co., Ltd., Kitchener, Ont.

VENTILATING • AIR CLEANING • AIR TEMPERING • INDUCED DRAFT • EXHAUSTING • FORCED DRAFT • COOLING • HEATING • PRESSURE BLOWING

for economy in handling and storage...

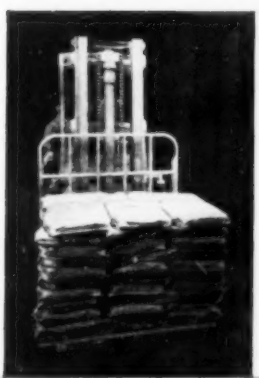
ULTROX and ULTROX 500W



NOW

ON EXPENDABLE WOOD PALLETS

Shipment on expendable wooden pallets is another dividend for users of ULTROX and ULTROX 500W... They save through faster, more economical handling. It pays to get quality in a complete package — the uniformity of ULTROX or ULTROX 500W for superior glazes, and M&T's new expendable wooden pallets for economy in handling.



- New M&T "no-return" wooden pallets are strong, permit fast, trouble-free handling and stacking.
- Wooden palletized shipments enable one lift truck operator alone to load, unload, and stack— no need for greased forks, starting wedges, or additional supports for stacking, as with other types of pallets.
- Moisture-resistant 4-ply bags of Ultrox and Ultrox 500W—stacked on wooden pallets—arrive safely, stay stronger, last longer.

METAL & THERMIT
CORPORATION
GENERAL OFFICES: RAHWAY, N. J.
METAL & THERMIT—UNITED CHROMIUM OF CANADA, LIMITED • REXDALE, ONTARIO

GLAZE OPACIFIERS
Ultrox® Ultrox 500W
Tin Oxide

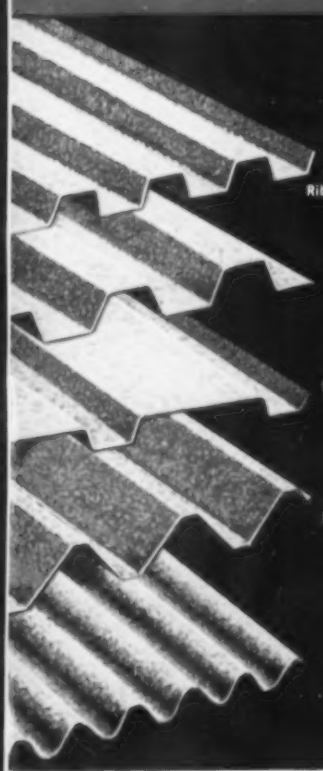
CERAMIC MINERALS
Zircon, Milled Rutile, Milled

ENAMEL OPACIFIERS
Antimony Oxide Sodium Antimonate
Zirconium Silicate

ADDITIVES FOR BARIUM TITANATE DIELECTRICS
Crystalline Stannates of Bismuth, Lead, Calcium, Magnesium and others

Freeport Brick Co. Plant, Freeport, Pennsylvania. Dimensions: 640'x 100'x 22'.
Architects, Engineers and General Contractor: Freeport Brick Co.

Sub-Contractor for Roofing and Siding: Callery Industries, Inc.
130 Hillvue Lane, Pittsburgh 37, Pennsylvania.



A KAISER ALUMINUM ROOFING & SIDING SHEET TO SUIT YOUR NEEDS

Ribbed Siding

Thickness: 0.032" and 0.040"
Length: 5' to 22' in 6" increments and 22'-5"
Width: 41⅜" overall
Rib Configuration: 1" deep — 4" and 8" pitch
Finish: Stucco Embossed

Also available with rib configuration 1½" deep — 5.33" pitch. Sheet thickness 0.032". Lengths 5' to 12' in 6" increments. Other specifications on request.

V-Beam Roofing & Siding

Thickness: 0.040" and 0.051"
Length: 5' to 22' in 6" increments and 22'-5"
Width: 41¼" overall
V-Configuration: 1¼" deep — 4⅞" pitch
Finish: Stucco Embossed

Industrial Corrugated Roofing & Siding

Thickness: 0.024" and 0.032"
Length: 5' to 12' in 6" increments
Siding Width: 33⅛" and 47⅛" overall
Roofing Width: 35" and 48⅛" overall
Corrugation: ⅞" deep — 2.67" pitch
Finish: Plain Mill and Stucco Embossed

Flat Sheet Roofing & Siding

Thickness: 0.024" and 0.032"
Finish: Plain Mill and Stucco Embossed

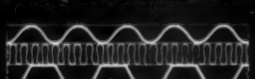
Full specifications on request.

NOTE: Kaiser Aluminum also offers a complete selection of flashing sheet, formed flashing, closures and other accessory building items.

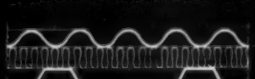
NEW! INSULATED ALUMINUM "SANDWICH" WALLS

Choose From These and Other Sandwich Combinations

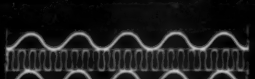
Inner Skin: 0.024" Industrial Corrugated Siding
Outer Skin: 0.032" Ribbed Siding—5.33" pitch



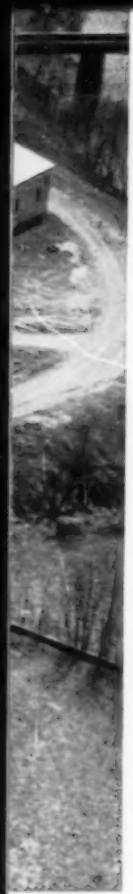
Inner Skin: 0.024" Industrial Corrugated Siding
Outer Skin: 0.032" Ribbed Siding — 4" pitch



Inner Skin: 0.024" Industrial Corrugated Siding
Outer Skin: 0.032" Ribbed Siding — 8" pitch



Inner Skin: 0.024" Industrial Corrugated Siding
Outer Skin: 0.032" Industrial Corrugated Siding



LONGEST LIFE LOW INITIAL COST!

Freeport Brick Company—one of today's foremost manufacturers of ladle brick—chooses corrosion-resistant Kaiser Aluminum roofing and siding for their new 64,000 square foot brick plant

The Pittsburgh area's corrosive climate can be murder on many building materials — and the Freeport Brick Company knew it.

So, before starting work on their new brick plant in Freeport, Pennsylvania, company president Francis H. Laube made an intensive study of all available materials — including aluminum and specially treated steel.

His purpose: to determine just which would best combine the benefit of minimum long range maintenance with low *initial* cost.

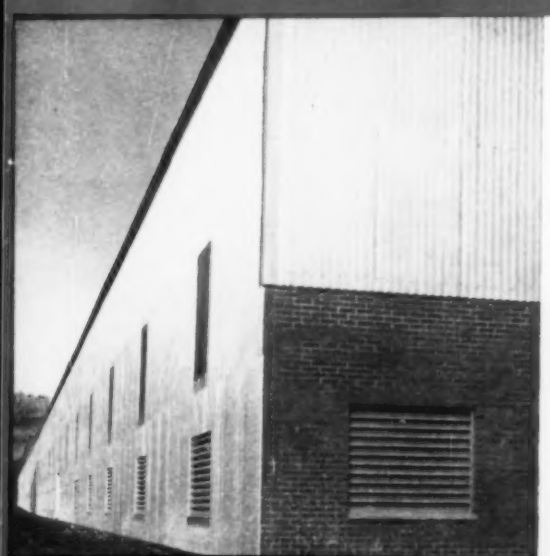
Result? Freeport specified corrosion-resistant sheets of Kaiser Aluminum—and is now looking forward to many years of economical service.

And Freeport got a bonus. Kaiser Aluminum's light weight — plus special design features — made big *installation* savings possible, too!

For example, sub-contractor David Starr of Callery Industries, Inc., a Kaiser Aluminum franchised applicator-erector, has this to say about their roofing work:

"We were very pleased with the way lightweight Kaiser Aluminum 48" corrugated sheets handled. Because of their extra width, fewer sheets were needed and there was considerably less waste from lapping. In fact, the entire 64,000 square feet were covered in only 15 days.

"For our money, nothing beats the benefits of Kaiser Aluminum industrial building products."



Attractive combinations of brick and functional Kaiser Aluminum box ribbed siding were employed for three walls of the plant. The fourth was hung exclusively in aluminum to allow for easy future expansion.

Kaiser Aluminum produces a full line of building products ideally suited for the brick and clay industry.

Weighing two-thirds less than similar steel materials, they speed construction and reduce the need for heavy, expensive supporting structurals. Their unique combination of strength and corrosion resistance promises a lifetime of handsome service with little necessity for painting or other care. And their distinctive embossing adds to the appearance of the building plus giving greater glare diffusion.

For A.I.A. File and full information, contact the Kaiser Aluminum sales office listed in your telephone directory. Or write Kaiser Aluminum & Chemical Sales, Inc., *General Sales Office,* Palmolive Bldg., Chicago 11, Ill.; *Executive Office,* Kaiser Bldg., Oakland 12, Calif.

KAISER ALUMINUM

THE BRIGHT STAR OF METALS

See "MAVERICK" Sunday evenings, ABC-TV Network. Consult your local TV listing.

YOU CAN LOOK AND LOOK AND LOOK AND LOOK

But . . . you can't find a better way to INCREASE OUTPUT and at the same time CUT LABOR COST . . . than with a

Bickerstaff Brick Fork

Over 226 brick plants throughout the U. S. and foreign countries are using Bickerstaff Brick Forks. More and more, plant operators are discovering that for every type kiln, for every operation, every size package, Bickerstaff Brick Forks save them money and man hours all along the way.

There is a size and model Bickerstaff Fork just right for YOUR job. Automatic and Hydraulic models in sizes from 4x3 and larger.

Write Today For Free Descriptive Brochures

BICKERSTAFF, Inc.

COLUMBUS, GEORGIA

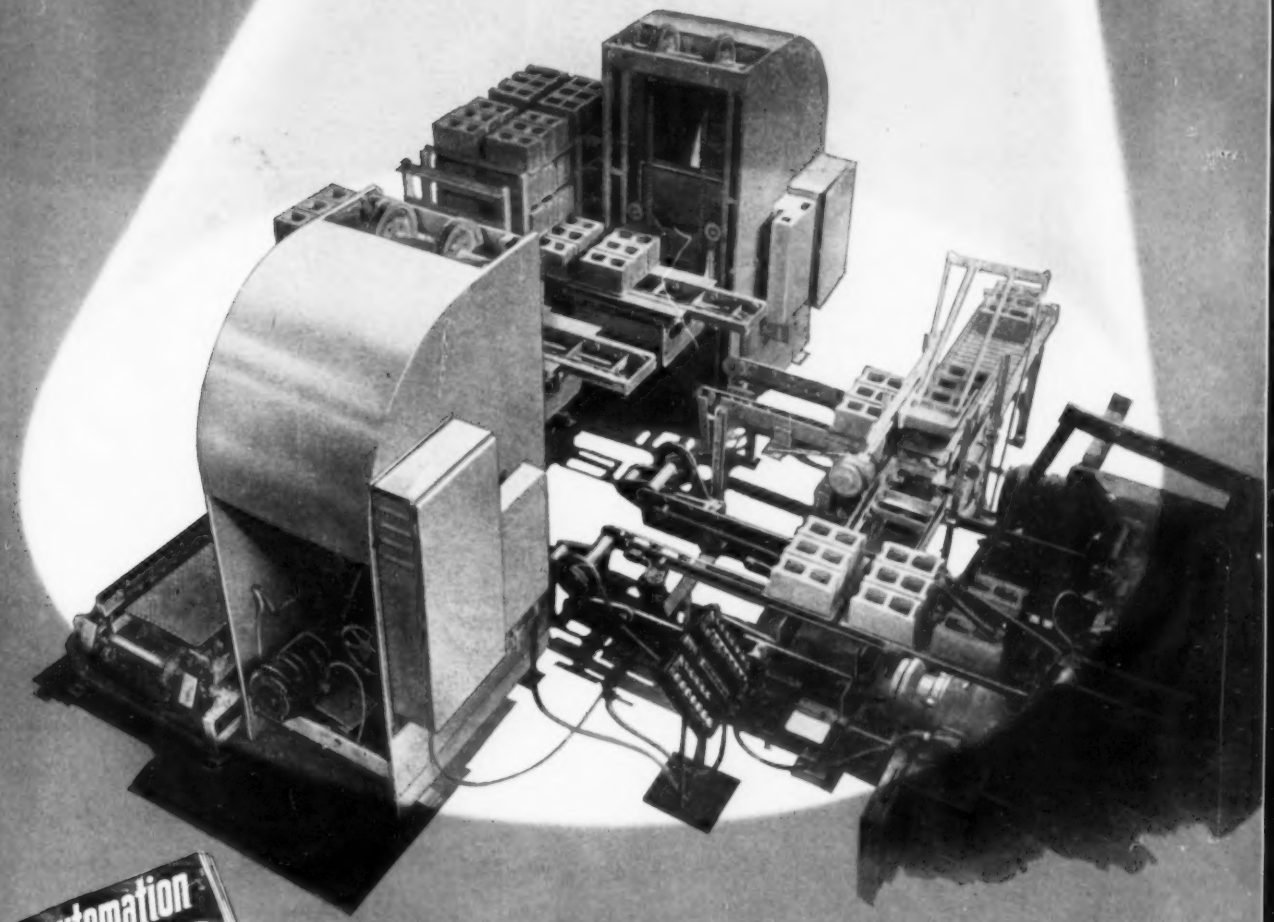
Manufacturers, Designers of Material Handling Equipment

West Coast Representatives: WALTER C. STOLL & SONS 5028 Alhambra Ave., Los Angeles 32, California

The Industry's Spotlight is on

BESSER-MATIC

You want to produce high quality block, faster, using a minimum of production workers. Today, you can do that with BESSER-MATIC — the worthy companion machine to the automatic VIBRAPAC. Both machines installed in your plant enable you to produce high quality concrete masonry units with speed and economy. The VIBRAPAC, plus BESSER-MATIC, is truly the answer to a blockmaker's prayers.



Investigate BESSER-MATIC. Write for your copy of Bulletin No. 132 "AUTOMATION for Block Plants". It gives you the success story of a prominent blockmaker who has put BESSER-MATIC through its paces.

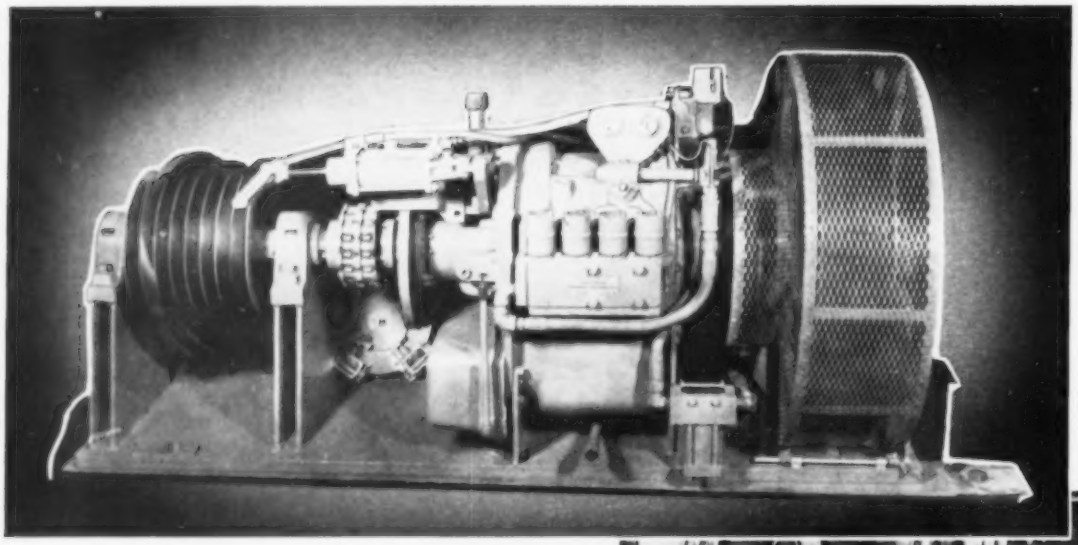
BESSER-MATIC performs five synchronized operations — automatically. Just push a button and the machine loads green block . . . indexes new rack . . . unloads cured block . . . depallets cured block . . . and returns empty pallets. ***BESSER-MATIC*** eliminates both off-bearer and power hoist . . . minimizes the number of cull block . . . allows for better inspection . . . promotes block plant safety. ***BESSER-MATIC*** was designed, developed and field-tested by BESSER Company, manufacturers of the world-famous Vibrapac machine.

BESSER Company

Dept. 139, Alpena, Michigan, U. S. A.

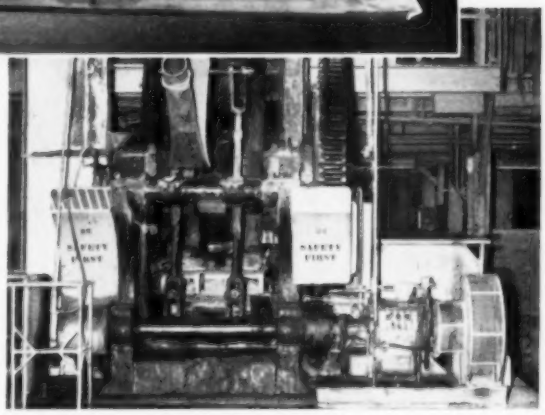
FIRST IN CONCRETE BLOCK MACHINES

A8-179



want **INCREASED DENSITY**
with **MORE UNIFORMITY?**

from your present presses . . .
using your same mix . . .



Install the New **MULTI-SPEED** *Dry Press Drive*

You can now produce more brick per hour, with fewer rejects, with increased density, and more uniform consistency!

The Multi-Speed Dry Press Drive combines variable speed ratios for the pressing, charging and ejection cycles of standard mechanical brick presses. This variable speed ratio produces a higher density brick while presses are operating at full capacity.

The Multi-Speed Dry Press Drive slows presses to three strokes per minute during the pressing cycle . . . speeds up to ten strokes per minute on the charging cycle . . . shifts to an intermediate gear for ejection. Fast charging eliminates many air voids, reduces roll and segregation in the mold box.

Available in double V belt or direct coupled drive, with or without torque converter.

For complete information call or write

ORTRUC, inc. FRanklin 1-3422
320 South Grand Avenue • St. Louis, Missouri

MILLER DOUBLE ROTOR HAMMERMILLS HAVE

HIGH SPEED IMPACT

Bonus pulverization . . . that's what you get with Miller's Double Rotor Hammermills. Terrific impact of particle against particle . . . giving you Bonus Pulverization and a high percentage of fines. Rugged and dependable, there is no better Hammermill value available anywhere. Call or write Miller for full information.

miller double rotor hammermills

- √ bonus pulverization
- √ replaceable hammers and tips
- √ manganese steel hammers, grates
- √ precisioned balancing
- √ 50 and 100 ton capacities

Miller Equipment Company

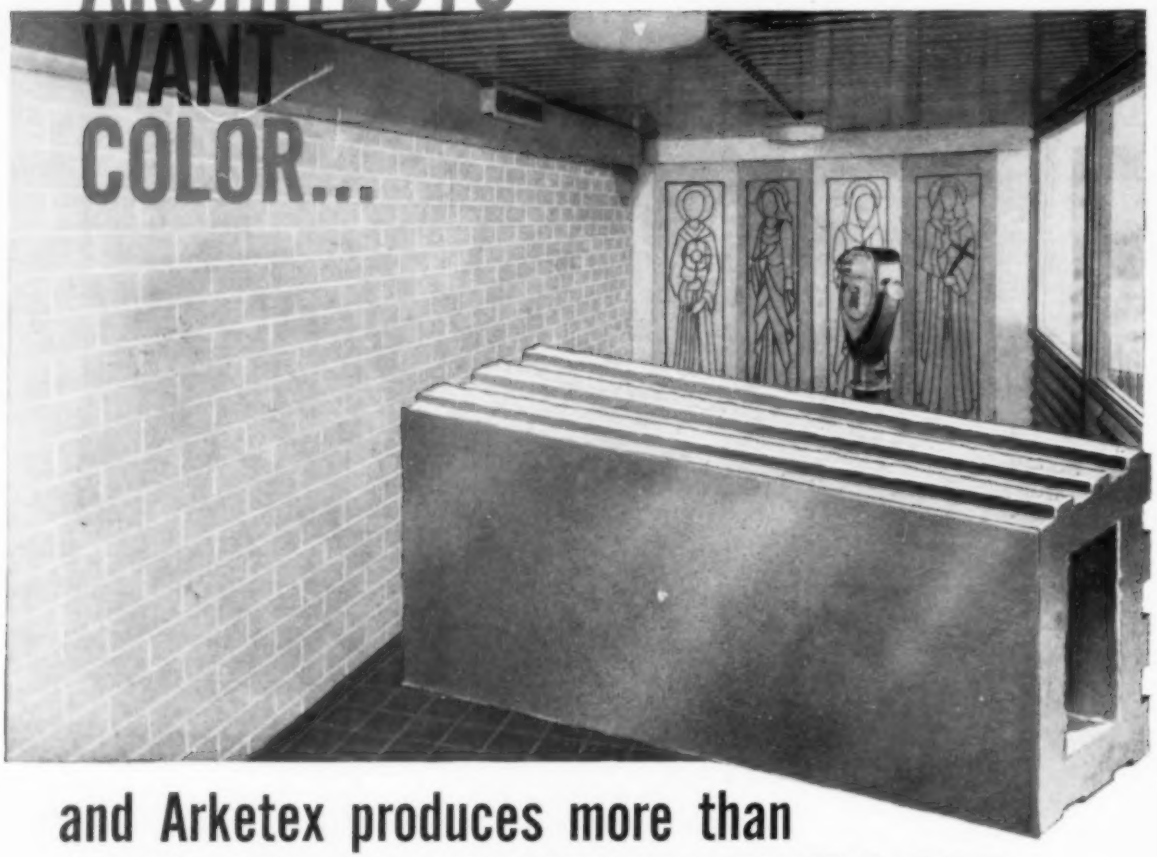
P. O. Box 1566 • Phone ME 3-3541 • Salisbury, N. C.

Southwestern Agent:
A. K. MOULTON ASSOCIATES
6936 San Pedro Avenue
San Antonio 12, Texas

Pacific Agent:
WALTER C. STOLL & SONS
5028 Alhambra Avenue
Los Angeles 32, California

ARCHITECTS WANT COLOR...

ARKETEX CERAMIC GLAZED STRUCTURAL TILE in the observation tower of the Life and Casualty Insurance Company of Tennessee. Architect: Edwin A. Keeble Associates, Inc., Nashville, Tenn. General Contractor: J. A. Jones Construction Company, Charlotte, N. C. Masonry Contractor: Elliott and McIntosh, Nashville, Tenn.



and Arketex produces more than 48 SHADES ON STRUCTURAL FACING TILE

Architects are specifying more and more ceramic glazed structural tile for economy reasons as well as for its aesthetic and psychologic values. Colorful, durable structural facing tile—like that made by Arketex Ceramic Corporation, Brazil, Indiana—creates completely finished load-bearing walls in a single construction operation. Arketex's full complement of shapes and sizes is produced in a rainbow of decorative and functional colors. The smooth, colorful glaze surface retains its beauty, reduces maintenance to infrequent washing.

Through the years Drakenfeld has been proud to meet Arketex's needs for many colors with glaze stains formulated to precisely repeatable specs. Whatever the scope of *your* present or future production plans in this expanding market, remember that Drakenfeld offers a variety of consistently uniform coloring materials – glaze stains, glaze specks, prepared glazes, sand colors, englobe stains —to suit practically every brick or tile processing setup. An experienced team of our ceramists will gladly discuss color application methods and give you prompt, reliable help on your coloring problems. We welcome your inquiry.

CALL ON **Drakenfeld** YOUR PARTNER IN SOLVING COLOR PROBLEMS

B. F. DRAKENFELD & CO., INC.

Executive Offices: 45 Park Place, New York 7, N. Y.

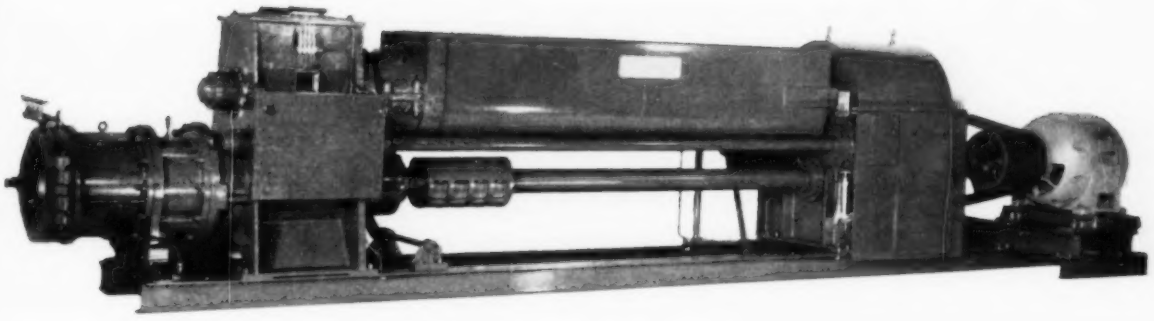
Factory and Research Center: Washington, Pa.

Pacific Coast Agents:

BRAUN CHEMICAL COMPANY, 1363 So. Bonnie Beach Place, LOS ANGELES 54, California, Phone: ANgelus 9-9311

BRAUN-KNECHT-HEIMANN COMPANY, 1400 Sixteenth Street, SAN FRANCISCO 19, California, Phone: HEmlock 1-8800

A PAIR OF REAL PRODUCERS

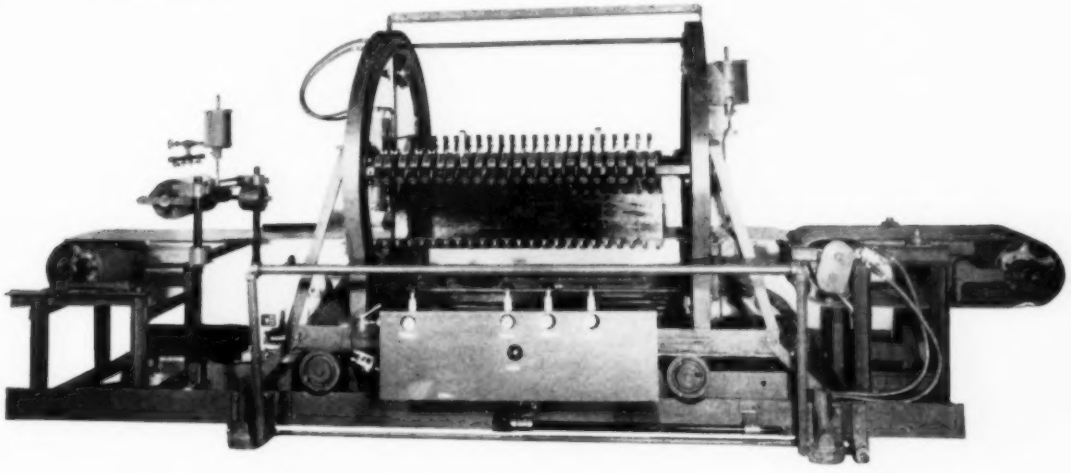


↑ ***New No. 12 AC BRICK MACHINE***

Hi-Power model, up to 300 HP, combines all-steel construction and generous use of alloy materials to match today's brick and hollow tile standards with safety factors provided for tomorrow's more exacting extrusion problems. 18¾" auger, fed by 21" augers in vacuum case; 12' pug mill tub.

↓ ***No. 30 Series CUTTER***

Four models of the #30 series, each available in length up to 5 12-in. cuts, are becoming nationally recognized as providing either maximum accuracy or high-speed bar cutting beyond the range of other machines. Quick-change platen assemblies and conveyor tailored to your exact requirements.



FOR PROFITS AND SAVINGS

Inquire today about the machines for your production.

SERVING YOUR INDUSTRY FOR OVER 100 YEARS

CHAMBERS BROTHERS CO. 1857 1959

52nd & Media Streets · PHILADELPHIA 31, PA.

NEW EQUIPMENT

New Payloader

The rear-wheel drive, front-wheel-steer Model HF Payloader is being replaced by the new H-30R model. The H-30R has a carry capacity of 3,000 lbs. at average operating speeds; is also a rear-wheel-drive unit. Buckets from 2/3 to 2 cu. yds. are available. Bucket action allows a full 40° of tipback. The Payloader also has a new torque converter.

Frank G. Hough Co., Libertyville, Ill.

148/Circle on Reader's Service Coupon

Medium Size Scraper

Allis-Chalmers has announced a new medium sized motor scraper—the TS-260—a 44,300 lb. unit with 12.5 cu. yd. struck and 17 cu. yd. heaped capacity. The tractor is powered by a new 16,000 six cylinder Diesel engine developing 230 hp at 2000 rpm. The scraper is hydraulically operated.

Allis-Chalmers Mfg. Co., Milwaukee 1.

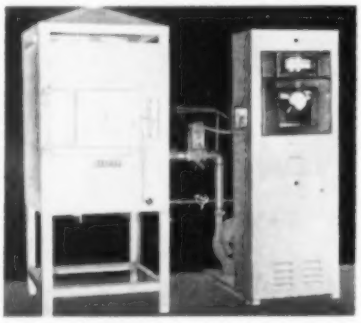
149/Circle on Reader's Service Coupon

Chem-O-Sol Primer

An improved primer for Chem-O-Sol clay pipe joints has been developed to solve the problem of adhesion breakdown in the yard from exposure to weather. The maker says that with the new primer, said to have excellent water resistance and superior adhesion qualities, Chem-O-Sol gaskets cannot be stripped from the pipe, even in rough handling. The primer activates over a wide range of pre-heating temperatures, 260-325°.

Chemical Products Corp., East Providence 14, R. I.

150/Circle on Reader's Service Coupon



Test Furnace

This model GF-1 Harrop test furnace, newly designed, is intended for the evaluating for the firing properties of ceramic materials when gas-fired under oxidizing or reducing conditions. The furnace can be equipped with either a muffle or a hearth with setting space 11" wide, 12" high, and 17" deep, operating up to 2500° F. It is usually equipped with a program proportioning controller, although variations in this can be supplied.

Harrop Electric Furnace Div., Harrop Ceramic Service Co., Columbus 19, Ohio.

151/Circle on Reader's Service Coupon

Hyster Fork Trucks

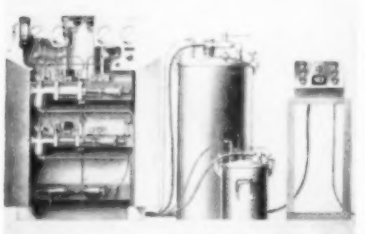
An all-new series of 6,000 to 8,000 lb. capacity lift trucks are now in production by Hyster, part of the recently announced Challenger line. The Challenger 70 and 80 are said to be the only pneumatic tire trucks on single wheel drives in these weight capacities offered by any manufacturer. Narrow width of single wheel design, plus short turning radius and power steering, permit use of the lift trucks in kiln doors, boxcar doors and other limited-access areas.

Hyster Co., Portland 8, Oregon.

152/Circle on Reader's Service Coupon

Resin Metering

Improved, automatic equipment for proportional metering, mixing and metered dispensing of multi-component reactive liquid resins are now being made by Mitchell. The company has acquired patent rights from the NoVo metering and mixing systems



formerly made in New York. The units can be used in processing epoxies, polyesters and others. Units can be modified for special processing needs.

Mitchell Specialty Div., Industrial Enterprises, Inc., Edmund and Shelmire Sts., Philadelphia 36.

153/Circle on Reader's Service Coupon

Buying

Materials Equipment Services?

B&CR offers readers quick service for your inquiries concerning any of the keyed items in the New Products pages, on this card, or in the special information sections. You can also get additional, complete information on any advertisement in this issue.

All you do is circle the number of the editorial item or the page number of the advertisement on this card, and mail it to us.

MANGANESE ORES—Chromite, Magnetite, Fluorspar and Manganese can be supplied by National Paint & Manganese. Company has greater facilities now, can supply faster through local outlets, offers a wider range of products. National Paint & Manganese Co., Lynchburg, Va.
100/Circle on Reader's Service Coupon

STANLEY TIGHTENERS—The new O tightener is said to operate with ease and speed in any position; use fewer strokes for takeup, reduce operator fatigue. Manually operated tool has unlimited takeup, has two holding pawls on tensioning wheels. Stanley Steel Strapping Co., New Britain, Conn.
101/Circle on Reader's Service Coupon

BOYD PRESS—The new Boyd press has many improvements: new bearings, stronger toggles, heavier frames, automatic force-feed lubrication, air-operated clutch brake, air operated charger. Can give you top profit dollar from high volume dry press brick production. Chisholm, Boyd & White Co., Chicago 21, Ill.
102/Circle on Reader's Service Coupon

TRUCK CRANE—Can unload off either side, put loads on the sidewalk; handles brick or block unpalleted or palleted or packaged. Bradney Machine Co., Middletown, N. Y.
103/Circle on Reader's Service Coupon

CONVEYOR BELTING—Scandura has new fire-proof belts that eliminate fire hazards, will not strip or tear. Belt absorbs terrific impact with minimum abrasion, maker says. Scandinavia Belting Co., Newark 1, N. J.
104/Circle on Reader's Service Coupon

BINDERS—Glutrin (liquid) or Goulac (powder) can help increase molding and dry strength of brick, clay refractories, pipe, tile, and other clay products. Small amounts required—easy to use. Robeson Process Co., Erie, Pa.
105/Circle on Reader's Service Coupon

INVENTORY SCALE—A new totalizing scale by Thayer fits over any conveyor, continuously weighs material passing through. Can be used on level or inclined conveyors. New plate leverage system is guaranteed for the life of the scale. Thayer Scale Corp., Pembroke, Mass.
106/Circle on Reader's Service Coupon

ORTON CONES—More uniform ware can be had with use of these cones. They can be placed throughout the setting to provide a visual check on the ware during the critical high fire stage; indicate end point of firing; show distribution of heat throughout the ware. Edw. Orton Jr., Ceramic Foundation, Columbus, Ohio.
107/Circle on Reader's Service Coupon

SCREEN HEATERS—Heated screens can eliminate blinding, increase tonnage, build greater profits and speed your production. F. R. Hannon & Sons, Canton 7, Ohio.
108/Circle on Reader's Service Coupon

CEMENT GUN—With this machine, two or three of your men can easily place a lining 1 to 6" thick in one to continuous operation; can place up to 5,000 lbs. of refractory material an hour. Saves down time, material and extends the life of your present linings. Cement Gun Co., Allentown, Pa.
109/Circle on Reader's Service Coupon

1 CIRCLE Numbers of Interest to You! **2 MAIL** This Card at Once! **3 RECEIVE** Free Product Information

Please send me more information concerning the items I have Circled.

1-59

100-National Paint & Manganese Co.
101-Stanley Steel Strapping Co.
102-Chisholm, Boyd & White Co.
103-Bradney Machine Co.
104-Scandinavia Belting Co.
105-Robeson Process Co.
106-Thayer Scale Corp.
107-Edw. Orton, Jr. Ceramic Found.
108-F. R. Hannon & Sons
109-Cement Gun Co.
110-B. F. Drakenfeld & Co., Inc.
111-Buffalo Forge Co.
112-J. C. Steele & Sons
113-Walter C. Stoll & Sons
114-Fate-Root-Heath Co.
115-Ludlow-Saylor Wire Cloth Co.
116-Rockfacer Co.
117-Besser Co.
118-American Clay Machinery Co.
119-W. S. Tyler Co.
120-Deister Concentrator Co.
121-Link Belt Co.
122-North State Pyrophyllite Co.
123-Swindell-Dressler Corp.
124-Swiss Fabricating Co.
125-National Sewer Pipe Ltd.
126-Titanium Alloy Mfg. Co.
127-Acme Steel Co.
128-A. P. Green Fire Brick Co.
129-Chemical Products Corp.
130-R. G. Varner Steel Products Inc.
131-Williams Patent Crusher & Pulverizer Co.
132-Kaiser Aluminum & Chemical
133-Chambers Brothers Co.
134-Robinson Ventilating Co.
135-Des Moines Glove & Mfg. Co.
136-Engineering Associates, Inc.
137-Superior Supply Service Inc.
138-Sarjanian Glove Co.
139-Bonnot Co.
140-Paris Mfg. Co.
141-American Truck & Body Co.
142-O. Hommel Co.
143-McNally Pittsburg Mfg. Corp.
144-Gates Rubber Co.
145-International Clay Machinery Co.
146-Kimberly-Clark Corp.
147-Stoody Co.
Page 2 Bonnot Co.
Page 3 Williams Pat. Crusher
Page 4 Deister Concentrator
Page 5 Minerva Oil
Page 6 Builders Equipment
Page 7 Kimberly-Clark
Page 8 Buffalo Forge
Page 9 Metal & Thermit
Page 10-11 Kaiser Aluminum
Page 12 Bickerstaff, Inc.
Page 13 Besser Co.
Page 14 Ortruc, Inc.
Page 15 Miller Equipment
Page 16 Drakenfeld
Page 17 Chambers Brothers
Page 22 Titanium Alloy
Page 23 Dodge, F. W.
Page 24 Clearfield Machine
Page 25 Towmotor Corp.
Page 26 Timken Roller Bearing
Page 27 North American Mfg.
Page 28 Ohio Kilns
Page 29 St. Regis Paper Co.
Page 30 Varner, R. G.
Page 31 Harrop Ceramic Service
Page 32 Stoody Co.
Page 37 Pemco Corp.
Page 39 Ferro Corp.
Page 40 Lanly Co.
Page 47 North American Refractories
Page 48 Mexico Refractories
Page 49 Robinson Clay Products
Page 50 Gladding, McBean & Co.
Page 51 Walsh Refractories
Page 52 Harbison-Walker
Page 53 Kyanite Mining Corp.
Page 54-55 Ferro Corp.
Page 56 Babcock & Wilcox
Page 57 National Engineering
Page 58 North State Pyrophyllite
Page 59 Wellsville Fire Brick
Page 60 Harbison-Walker
Page 61 Denver Fire Clay
Page 62 Green, A. P.
Page 63 Vanderbilt, R. T.
Page 64 Chisholm, Boyd & White
Page 83 Globe Brick Co.
Page 83 Philadelphia Quartz
Page 84 Samuel, Frank
Page 85 Illinois Clay
Page 85 Oak Hill Fire Brick
Page 85 Oswald Refractories
Page 86 U. S. Borax
Page 89 West Virginia Pulp & Paper
Page 90 Robinson Ventilating
Page 91 Hendryx, Dwight B.
Page 92 Roura Iron Works
Page 93 Besser Co.
Page 93 Chase Foundry
Page 93 Schurs Oil Burner
Page 94 Universal Vibrating Screen
Page 95 Bradney Machine
Page 95 Robeson Process
Page 96 Hommel, O.
Page 96 Manufacturers Equip.
Page 96 Hannon, F. R.
Page 96 Stoll, Walter C.
Page 97 Lassman, Benjamin
Page 98 Orton, Edw.
Page 98 Paris Mfg.
Page 99 Overstrom & Sons
Page 99 Superior Supply Service
Page 99 Engineering Assoc.
Page 100 Gravely Tractors
Page 100 Ton-Tex Corp.
Page 100 Tyler, W. S.
Page 100 Foote Mineral
Page 101 Rockfacer Co.
Page 101 Des Moines Glove
Page 101 Eagle Iron Works
Page 104 Steele, J. C.
Page 105 Fate-Root-Heath
Page 106 American Clay Machry.

NAME _____ TITLE _____

COMPANY _____

STREET _____

CITY _____ ZONE _____ STATE _____

This Card Void After March 28, 1959

COLOR—By facing your common brick with Drakenfeld glazes you can get premium prices. Drakenfeld will help solve your color application problems. B. F. Drakenfeld & Co., Inc., New York 7.

110/Circle on Reader's Service Coupon

FANS—Buffalo Forge CR radial blade fans are built sturdy to work under tough conditions. Use of a refinement of the radial blade design gives both boosted performance and reduced wear. Buffalo Forge Co., Buffalo, N. Y.

111/Circle on Reader's Service Coupon

CUTTERS—Steele has a new spring assembly that replaces the overhead chain and pulley, eliminating the need for overhead beams or the posts formerly required for the installation of their #18 cutter. The spring assembly also provides much smoother action. J. C. Steele & Sons, Statesville, N. C.

112/Circle on Reader's Service Coupon

MOISTURE CONTROL—Stoll has an automatic moisture control that is said to provide 100% control in pug mill or batch mixer; automatically hold desired moisture content, provide against product size variation. Walter C. Stoll & Sons, Los Angeles 32, Calif.

113/Circle on Reader's Service Coupon

EXTRUSION—Marion Brick uses an F-R-H de-airing extrusion machine to get close quality control. Their F-R-H is said to provide extra hard, uniform columns that help maintain production schedules. Fate-Root-Heath Co., Plymouth, Ohio.

114/Circle on Reader's Service Coupon

SCREENS AND CLOTHS—By Ludlow-Saylor are said to have better dimensional stability, resistance to wear, pressure, vibration and heat because of extra efforts in the manufacturing process. Ludlow-Saylor Wire Cloth Co., St. Louis 10, Mo.

115/Circle on Reader's Service Coupon

ROCKFACERS—Can turn a loss into a profit by making 2,000 culls per hour into a premium rock-faced brick. One owner says that his machine was paid for 3 times in the first 9 months. Rockfacer Co., Mesquite, Tex.

116/Circle on Reader's Service Coupon

BATCH MIXERS—Besser machines have twin spiral blades made of Ni-Hard iron; quick acting, air operated discharge gate; entire contents of mixer drum can be discharged in 15 to 20 seconds. Besser Co., Alpena, Mich.

117/Circle on Reader's Service Coupon

GRINDER—America's 384 grinder has been designed to handle big volume grinding at a rate of a ton a minute, handling hard clay shale and other material. Materials can be handled wet or dry because there are no screen plates to clog. American Clay Machinery Co., Marion, Ohio.

118/Circle on Reader's Service Coupon

SCREEN SECTIONS—Tyler screen sections are made for all makes of vibrating screens in any mesh or metal; made with hook-strip or bent-edge construction to suit your machine. W. S. Tyler Co., Cleveland 14, Ohio.

119/Circle on Reader's Service Coupon

LEAHY SCREENS—New model E screens with FlexElex heating assure change of screen cloth as quickly and easily as can be done on conventional, unheated models. No breaking or remaking of electrical connections in the transformer-screen circuit when jackets are changed. Deister Concentrator Co., Fort Wayne, Ind.

120/Circle on Reader's Service Coupon

VIBRATING SCREENS—By Link-Belt have high intensity, circular motion imparted by a simple, two-bearing vibrator; mechanism is fully enclosed for protection from heat, moisture and abrasive dust. Link-Belt Co., Chicago.

121/Circle on Reader's Service Coupon

BUSINESS REPLY MAIL

No Postage Stamp Necessary If Mailed in the United States

POSTAGE WILL BE PAID BY

BRICK & CLAY RECORD

5 South Wabash Avenue

Chicago 3, Illinois

FIRST CLASS
Permit No. 183
Chicago, Ill.

Color Coding

A band of colored tape is stripped all the way around each drum of Pemco pigment now to signify the color family of the pigment packed inside. This speeds identification of color supplies since the band can be seen no matter how the containers are stored.

Pemco Corp., Baltimore 24, Md.

154/Circle on Reader's Service Coupon

Utility Blower

A new utility blower, for a wide range of installations, has been introduced by Robinson. The package unit is weather-tight with motor and mechanism protected by a steel enclosure. Design and construction permits the use of an economical, open type motor which is fully protected

from the elements. The unit can be supplied in sizes to accommodate volumes from 650 to 16,000 cfm. Type J fan blade sizes range from 12 to 27".

Robinson Ventilating Co., Zelienople, Pa.

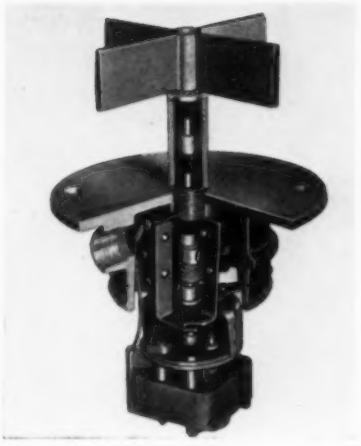
155/Circle on Reader's Service Coupon

Sand Coat Additive

Briewhite, a composition to improve the adherence and color of sand coatings for common brick, has been announced by Pemco. The product is an additive that improves color, adherence or both of white sand applied either by sand-blasting or molddusting. Special formulas will be developed to suit individual requirements.

Pemco Corp., Baltimore 24, Md.

156/Circle on Reader's Service Coupon

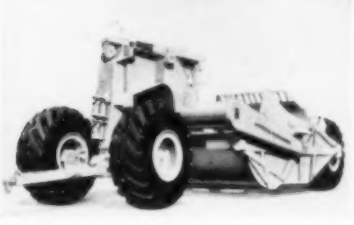


Level Control

A new Bin-Vue level indicator and control which features an easy-off cover and a "fail safe" device has been announced by Convair. Access to the unit is by simple method, with cover held in place by compression of an O ring on the mounting flange. A limit switch can be connected for visible or audible control; can also be connected to a relay circuit for automatic control. In operation, a 1/100 hp motor turns a four-blade paddle at 9 RPM by means of a torsion spring.

Convair, Pittsburgh, Pa.

157/Circle on Reader's Service Coupon



FullPak Scraper

Struck capacity of the LeTourneau-Westinghouse BT Fullpak scraper has been increased from 18.7 to 21 cu. yds, according to a recent announcement. Heaped capacity is 27 yards. The Fullpak is designed for use with tractors of 150 hp or more.

LeTourneau-Westinghouse Co., Peoria, Ill.

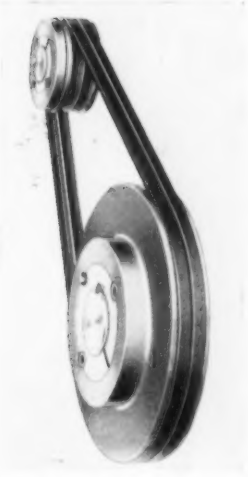
158/Circle on Reader's Service Coupon

Flexidyne Line

A new bulletin describes the entire expanded Flexidyne line of Dodge dry fluid drives and couplings. The 24-page book has product photographs, engineering drawings, installation and application photos. The new line includes 10 stock couplings and 8 stock drives ranging from fractional to 1000 hp. Bulletin includes tables to guide buyer to proper selection.

Dodge Mfg. Corp., Mishawaka, Ind.

159/Circle on Reader's Service Coupon



V-Belt Drives

A completely new line of V-belt drives, featuring smaller and lighter sheaves and V-belts of higher capacity at less cost, has been announced by Dodge. Under the tradename Dyna-V, the new line covers the complete range of horsepower capacities available in conventional drives, with savings in space, weight and cost reported.

Dodge Mfg. Corp., Mishawaka, Ind.

160/Circle on Reader's Service Coupon

Low Cost Bearing

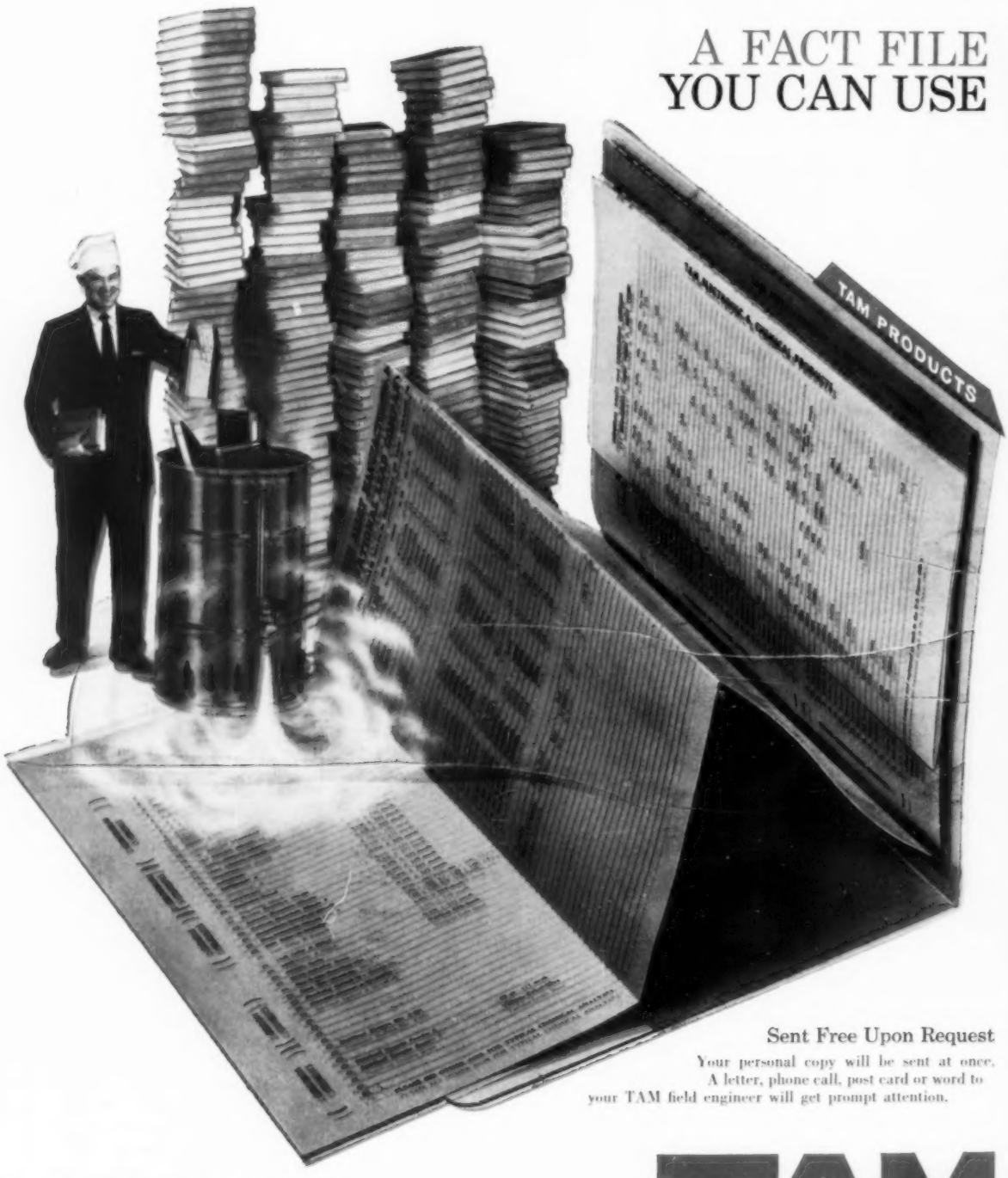
Two new low-cost wheel bearings with a high capacity rating for their size have been developed by Timken. The company reports that the new bearings, said to be the most economical ever made by Timken, were made possible by new developments in metallurgy. The larger bearing has a bore of 1.0625 inches, outside diameter of 1.980 inches, and width of .560 inches; comparable sizes for the smaller bearings are .6875, 1.570 and .545.

Timken Roller Bearing Co., Canton, Ohio.

161/Circle on Reader's Service Coupon

we boiled down tons of paper to give you

A FACT FILE YOU CAN USE



Sent Free Upon Request

Your personal copy will be sent at once. A letter, phone call, post card or word to your TAM field engineer will get prompt attention.

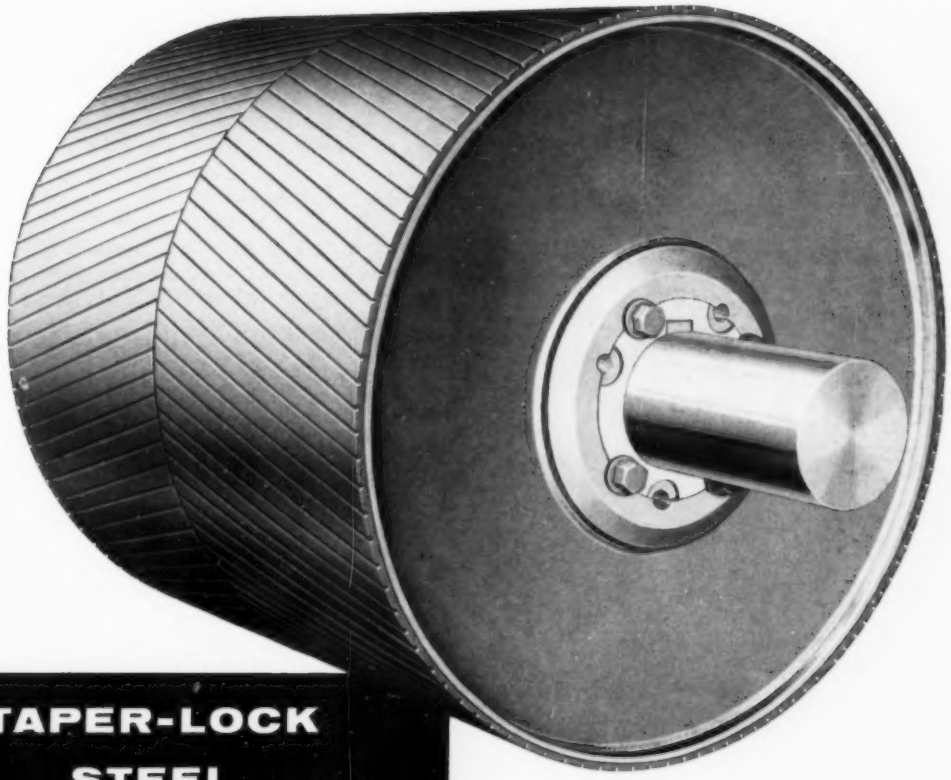
Here's a Handy Reference File

you can use. It gives you facts and figures on all the products TAM makes. Tabulates chemical analyses, physical properties and commercial uses into a compact, legible, working form. Everyone who has seen and used it finds that it saves valuable time —

TAM

DIVISION NATIONAL LEAD COMPANY

Executive and Sales Offices: 111 Broadway, New York City
General Offices, Works and Research Laboratories: Niagara Falls, New York



TAPER-LOCK STEEL CONVEYOR PULLEYS

Maximum strength with minimum weight...
Unmatched holding power on the shaft...
New mounting simplicity.

The rims, discs and hubs of these modern conveyor pulleys are *steel*—and they are fused together into jointless drum construction for (1) maximum strength with minimum weight, (2) exclusion of dirt, water, steam, (3) terrific shock resistance.

With the patented Dodge Back-up Bar, welds of full rim thickness are achieved—and the ultimate in strength is assured by submerged arc process welds.

Taper-Lock Steel Conveyor Pulleys *hold*. Taper-Lock provides the equivalent of a shrunk-on fit—there is no "walking" on the shaft. Mounting and demounting are simple. Pulley and bushings mount as a unit. Alignment is easy. And the tapered bushing is wedged into place merely by turning the mounting screws. It is "unlocked" by using the mounting screws as jack screws.

Available in diameters from 6 inches to 8 feet—all face widths. Standard or special rubber lagging available. Ask your local Dodge Distributor—or write us for bulletin.

DODGE MANUFACTURING CORPORATION, 4900 Union, Mishawaka, Ind.

97 Taper-Lock Steel Conveyor Pulleys are used in this famous conveyor system engineered, manufactured and erected by Hewitt-Robins, Inc., at the Southern Pacific's causeway construction across the Great Salt Lake.

DODGE
of Mishawaka, Ind.

CALL THE TRANSMISSIONEER—your local Dodge Distributor. Factory trained, he can give you valuable help on new, cost-saving methods. Look in the *white* pages of your telephone directory for "Dodge Transmissioneer."

INTRODUCING

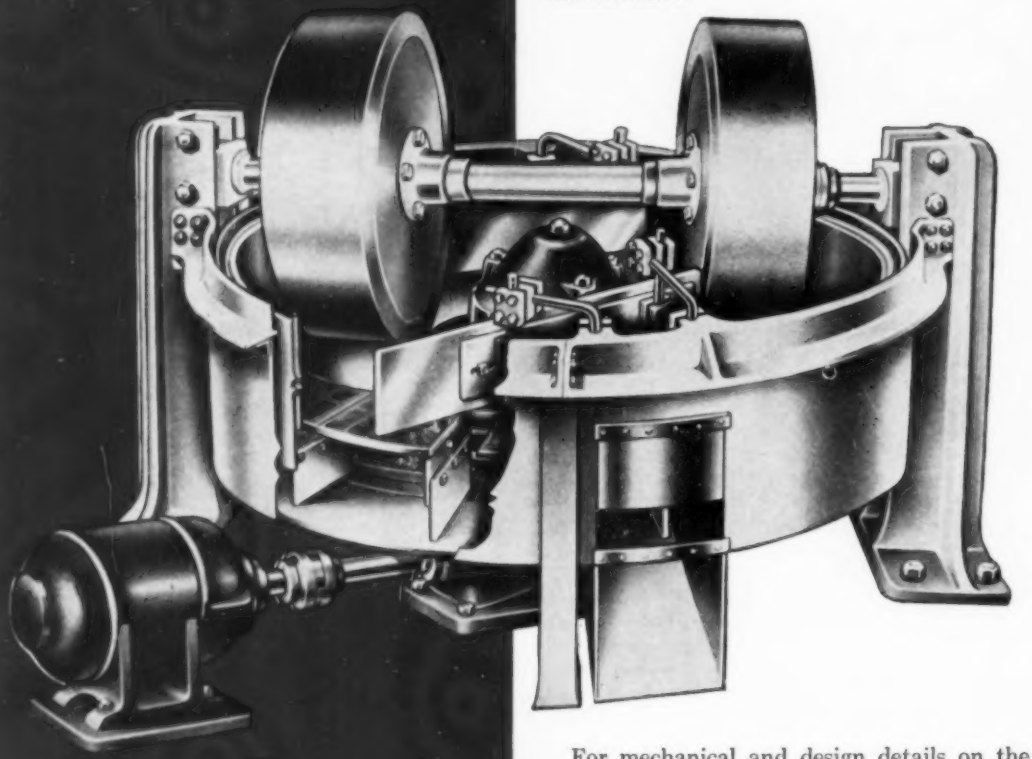
the new High-Efficiency CLEARFIELD DRY PAN...

Totally-enclosed direct motor drive assures lower production cost... easier maintenance

Clearfield's newest addition to its wide line of grinding machines for the refractory and ceramic industries has all the features that have made the Clearfield name famous for durability and efficiency in service . . . plus design and construction improvements that assure even greater grinding and production economies.

The new Model 900 comes in 8½ or 9-foot diameters and features a direct motor underdrive. With this method of drive, the worm engages a gear attached to the underside of the main revolving pan bottom; thus power is applied at a point very close to the grinding load . . . less power is needed, vibration is reduced, and since all equipment is accessible from the floor, maintenance and replacements are easier and quicker. Worm and gear operate in an oil bath and are completely enclosed in a dust-and-oil-tight cast-iron housing.

Crushing rolls are wide faced and spread far apart to give maximum crushing area per revolution . . . high production is achieved without excessive pan speeds, thereby reducing vibration, prolonging life of the machine. The ample screen plate area quickly discharges the correctly-ground material to the conveyor for screening or storage. All parts are durably constructed for long-life service with minimum maintenance.



CLEARFIELD MACHINE COMPANY

CLEARFIELD, PENNSYLVANIA, U.S.A.

For mechanical and design details on the new Model 900 – or any of our all-purpose grinders – just write for our technical bulletins. No obligation, of course.

Pacific Coast Representative: Fernholtz Machinery Company
8468 Melrose Place, Los Angeles 46, Calif.

Today's industries need Towmotor Continuous Operation

Stacks high ...ducks low... "free lift" tops all!

Safely handling heavy loads, this compact Towmotor lift truck can enter carriers, boxcars and doorways a six-footer ducks under!

Yet Towmotor offers a free lift range that is greatest in the industry. And new Towmotor high lift masts are available that stack goods in tiers over twenty feet tall. Low-cost lifting, stacking and loading are chiefly what you buy lift trucks for, and Towmotor does these jobs best!

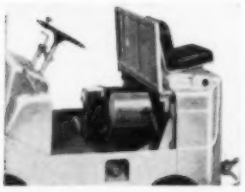
Send for 24-page booklet, "What Makes Towmotor Tick?" detailing the superior features Towmotor Fork Lift Trucks offer today. Free Certified Job Studies relating to your business will also be sent on request.

Leaders for 39 years in building Fork Lift Trucks, Tractors and Carriers

TOWMOTOR
THE ONE-MAN-GANG

GERLINGER

Gerlinger Carrier Co. is a subsidiary of Towmotor Corporation, Cleveland 10, Ohio



Easy on Mechanics! Towmotor tilt-back seat and slip-socketed side panels permit 23-second access to engine and parts . . . without tools . . . a mechanic's dream!

Easy on Muscles! Towmotor Improved Power Steering triples driving ease; Towmotor TowmoTorque Drive adds cushioned "creep control" unequalled in the industry.

Easy on Operating Costs! New functional-design construction in Towmotor "Pace-Maker" Series adds extra economy to Towmotor Continuous Operation. Model 540 shown.

☐ Send "What Makes Towmotor Tick?"

☐ Send free Certified Job Studies relating to our business, which is:

Name_____

Company_____

Address_____

Mail to **TOWMOTOR CORPORATION,** Cleveland 10, Ohio

Name your bearing needs...we'll meet 'em pronto from 30 types, 10,247 sizes

TIME and time again, machinery makers come to the Timken Company for help with some special bearing application problem. One they think hasn't been solved before. And time after time, from our 30 types and 10,247 sizes of Timken® tapered roller bearings, we've come up with the bearing design to do the job and at minimum cost.

It's no accident that we can help out so often. In sixty years of helping machinery builders with bearing problems, we've engineered and produced the world's largest selection of tapered roller bearings. And we've constantly improved our designs. The answers to thousands of bearing application problems are already in our files. Ready and available to help you.

And machine users get the same swift service if they ever need a replacement Timken bearing. Even for old machines, they can almost always count on immediate delivery of Timken bearings for replacement.

Why not call on our engineers for help whenever you have a bearing application problem or requirement? Timken is your No. 1 bearing value. Wherever wheels and shafts turn, Timken bearings eliminate friction, cutting wear and maintenance to a minimum. Specify bearings trade-marked "Timken" for the machines you buy or build. The Timken Roller Bearing Company, Canton 6, Ohio. Canadian plant: St. Thomas, Ont. Cable: "TIMROSCO".

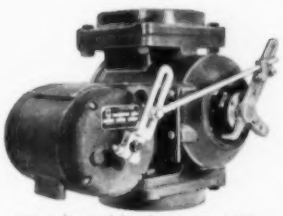
TIMKEN BEARING EQUIPPED — *This symbol on a product means its bearings are the best.*

TIMKEN *TAPERED ROLLER BEARINGS ROLL THE LOAD*

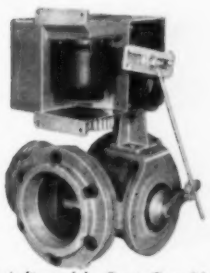
TRADE-MARK REG. U. S. PAT. OFF.

WIDELY USED
ADJUSTABLE PORT VALVES
by North American

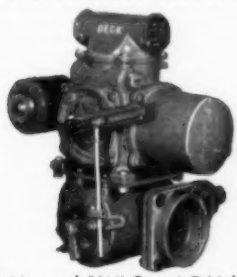
2½" A P Gas Valve—North American Hydraulic Operator



6" Adjustable Port Air Valve Minn.-Honeywell Elec. Operator



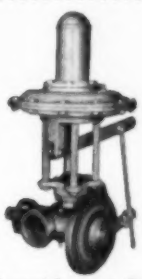
4" Adjustable Port Gas Valve Leeds & Northrup Elec. Operator



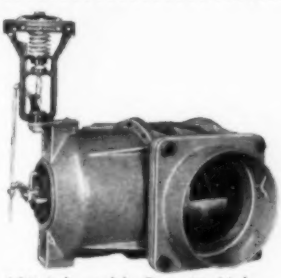
4" Air and 1½" Gas A P Valves Beck Electric Operator

10" A P Air Valve — North American Pneumatic Operator

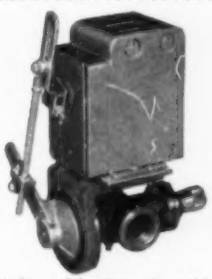
6" Air, ¾" Oil, and 2" Gas A P Valves—ATC Electric Operator



1½" Adjustable Port Gas Valve Conoflow Pneumatic Operator



12" Adjustable Port Air Valve Bristol Pneumatic Operator



1¼" Adjustable Port Gas Valve Barber-Colman Elec. Operator

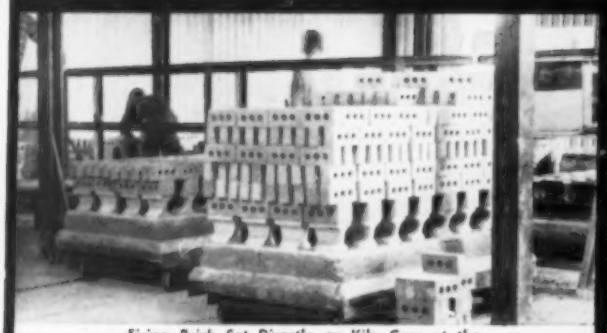
for HOT or COLD AIR, GAS, OIL, WATER, STEAM
special materials available for other fluids

LOW TORQUE • ROTARY PLUG • EASILY CLEANED
Pressure Drop Adjustable for Best Flow Characteristic

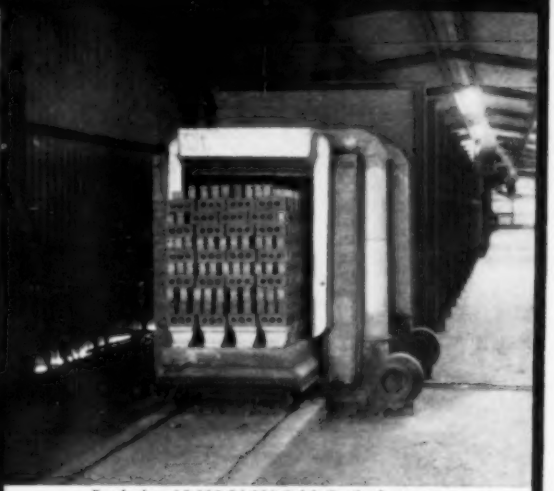
NORTH AMERICAN for COMBUSTION and Hydraulic Controls

The North American Mfg. Co.
Cleveland 5, Ohio

CLIPPER KILNS . . . For Quality Production



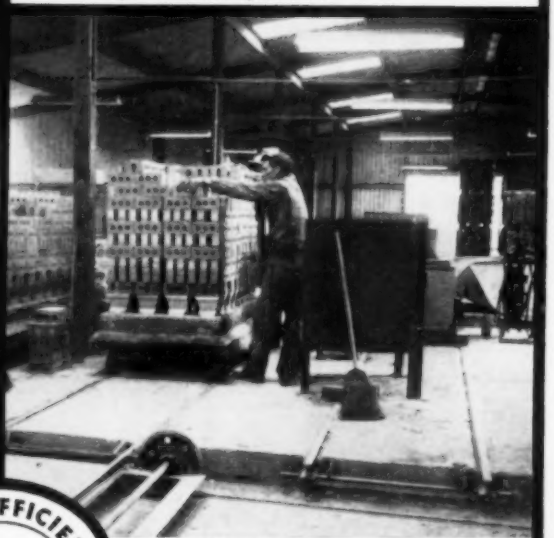
Firing Brick Set Directly on Kiln Cars at the Pugmill . . .



Producing 10,000-24,000 Brick Equivalents per Day in Minimum Space . . .

. . . or Brick Transferred from Dryer Cars.

. . . or Drain Tile Set Directly on Cars at the Pugmill.



. . . Obtaining Straight Loads, Even Sized and Excellent Color Control.

FAST • EFFICIENT CLIPPER LOW COST

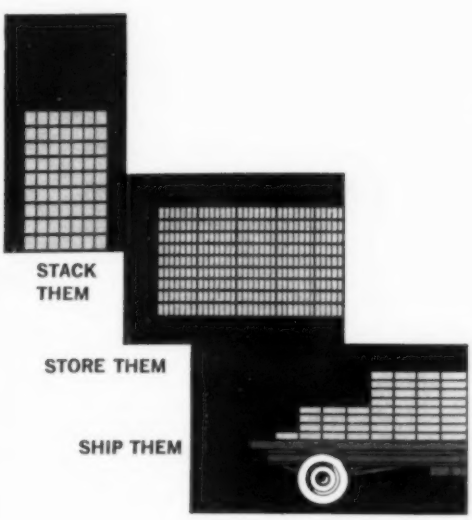
For full details on how you can expand plant production or modernize facilities at *minimum* cost . . . write or call today!

Our kilns are sold on a firm price. You know what the cost will be for the complete job, erected and operating.

OHIO KILNS
GRANVILLE, OHIO • JU 2-2571

CUSHIONING WITH CORRUGATED

MEANS LOWER SHIPPING LOSSES



Corrugated paper Bricartons eliminate call-backs and shipping losses...cut handling costs...help in palletizing. And they make a good impression on your customers, help build your business. Bricartons are available in sizes for all brick, tile, terra cotta and refractory brick. Complete information on sizes and deliveries promptly upon request. Write Canton Corrugated Box Company, 2820 Winfield Way, N.E., Canton 5, Ohio, Glendale 3-0151.

CANTON CORRUGATED BOX COMPANY

Division of St. Regis Paper Company

WHY DID PAYNE CHOOSE VARCO?

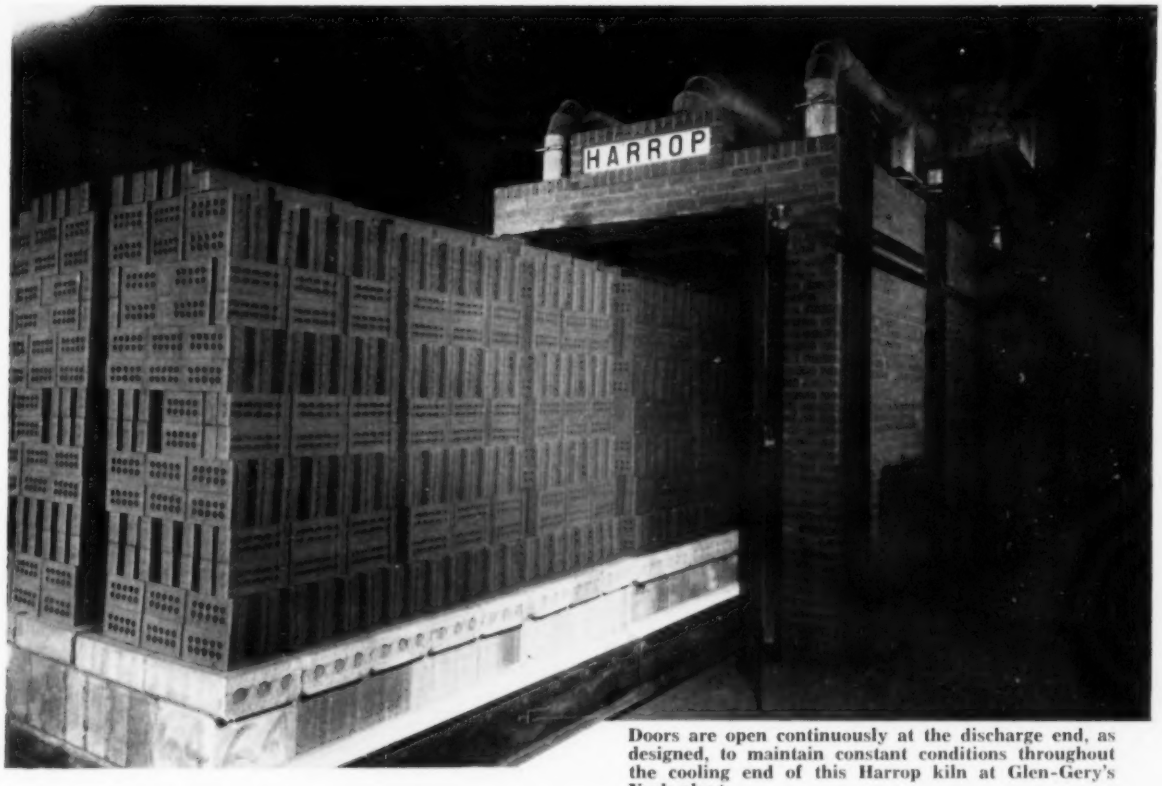
Varco Clay Storage Building
at Payne Brick Company,
Elgin, Texas

"Varco had the building that could give us clay storage at low cost, and they could erect it fast," stated O. L. Payne, president of Payne Brick Company. "It was just good business to go with Varco, and we're glad we did."

Give your plant protection against wet-clay down time with a low-cost Varco clay storage building. These sturdy, maintenance-free structures have been proven throughout the brick and clay industry and they can be erected on your foundation at exceedingly economical cost. Available in 60, 80, or 100-foot clear spans, the Varco building is designed to handle any type conveyor system up to a 24-inch belt, and can be covered with aluminum or galvanized siding.

Varco
STEEL BUILDINGS

R. G. VARNER STEEL PRODUCTS, INC. P. O. BOX 781 • PINE BLUFF, ARKANSAS



Doors are open continuously at the discharge end, as designed, to maintain constant conditions throughout the cooling end of this Harrop kiln at Glen-Gery's York plant.

"We really got a fourth Harrop kiln free"

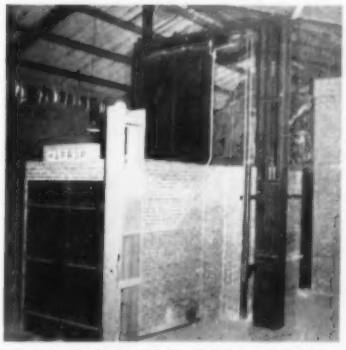
Design proposals called for a daily output of 109,000 face brick from three Harrop kilns at the Harrisburg, Watsontown and York Colonial plants of Glen-Gery Shale Brick Corporation, Shillington, Pa.

But current daily production from these three kilns runs 140,800 brick.

"That's why we say the 31,800 *extra* brick from our three Harrop kilns really means we got a fourth kiln free," says Gordon E. Lewis, Glen-Gery's Chief Engineer. "And we're maintaining this high production rate with a better than 95% recovery of first-quality brick."

Bonus production and consistent high quality — many a user of a Harrop kiln reports this kind of extra performance. It's the profitable "plus" you can look for when Harrop principals put their more-than-a-century of ceramic engineering experience to work for you.

This result-producing experience is yours for the asking . . . write, wire or phone to arrange a non-obligating consultation on your dryer, kiln or plant design needs.



(above) Air lock and drop door at the charging end are electrically interlocked with the pusher to maintain constant conditions as cars enter the kiln.

(below) Completely automatic draft control of the kiln's main exhaust is provided by this draft instrument and the damper it actuates.

HARROP

BRITISH ASSOCIATE: British Ceramic Service Co., Ltd., Bricesco House, Stoke-on-Trent, England

Harrop Electric Furnace Division, 3470 E. Fifth Ave., Columbus 19, Ohio . . . Laboratory, Industrial and School Furnaces.

Harrop Ceramic Service Co.

35 EAST GAY ST., COLUMBUS 15, OHIO

Wings on these augers are removable for replacement. The Borod hard-facing deposit prolongs life 4 times or more.

3 to 4 Months' Service from Auger Wings

Hard-faced with Stoody Borod

One of the common wear problems in clay machinery is auger wings or "wing knives." Normal service life is 2 to 3 weeks, yet at a cost of approximately $13.00 for labor and hard-facing materials, life can be extended up to 4 months.

Hard-facing procedure consists of welding a ⅛" round along the periphery of the wing then "plating" the entire pressure face as well as the edge with a thin deposit of Borod. Wings are regularly inspected for wear, removed when efficiency starts falling off and are rebuilt following the same procedure.

Latest wear prevention techniques on all types of earth-working equipment are fully described and illustrated in THE STOODY GUIDEBOOK. A copy is available through your Stoody Dealer (check the Yellow Pages of your phone book) or write direct to the company.

Treatment of the auger wing is shown here. Top view is a new wing. Below, shape and size of the outer edge is retained by a ⅛" round. Face and edge are then completely covered with a thin wash of Borod.

STOODY COMPANY

11950 East Slauson Avenue • Whittier, California

Brick & Clay Record

January, 1959 Vol. 134, No. 1

5 SOUTH WABASH AVE.
CHICAGO 3. ILL.
FRanklin 2-6880

Established 1892.
now in 67th year.

*Fred L. Steinhoff, Publisher
*J. J. Svec, Vice President and Executive Editor
Jack B. Anderson, Managing Editor
Elmer Spain, Technical Editor
Ralph Burris, Advertising Production
M. J. Skodon, Vice President in Charge of Manufacturing
Walter W. Koch, Art Director
R. H. Lash, Exec. Dir. of Circulation
H. G. Love, Circulation Director
*Edward Dietterle, 3834 Monteith Dr., Los Angeles 43, Calif. West Coast Editorial Representative

Advertising Sales Representatives
Please address all correspondence regarding copy, instruction and cuts to:

Chicago Office: 5 S. Wabash Ave., Chicago 3, Ill. FRanklin 2-6880
John H. Van Deventer, Vice President, Gen'l Sales Mgr.
Floyd M. Burdick, Business Manager
Roy Barron, Asst. Business Manager
S. J. Hoganson, Promotion Director
New York: Albert S. Robinson, Vice President, 420 Lexington Ave., Room 846, NYC 17. Phone: Murray Hill 3-2877
East Central: Richard F. Burkhart, Room 2138, The B. F. Keith Building, 1621 Euclid Avenue, Cleveland 15, Ohio. Phone: PRospect 1-1312, 1-1313, 1-1314
Southern: John M. Printup, 121 S. E. First St., Miami, Fla., Phone: Franklin 9-2668
Dallas: R. W. "Whit" Jones, John Printup & Assoc., 2607 Millmar Dr., Dallas 28, Tex. Phone: DAvis 1-0898
California: Wentworth Green Company, 439 S. Western Ave., Los Angeles 5, Phone Dunkirk 7-8135; **(A. S. Babcock)** 605 Market St., San Francisco 5, Phone YUkon 2-3954
Pacific Northwest: Frank J. McHugh, Jr., 520 S.W. 6th Ave., Portland 4, Oregon. Phone CApital 6-2561
Seattle: Frank J. McHugh Co., Thomas A. Knowles, 101 Jones Bldg., Seattle 1, Wash.; SEneca 3840

***Ceramic Engineering Staff.**

CONTRACTS. Formal acceptance made only at Chicago. DEADLINES. Advertising material requiring proofs must be received in Chicago by the 24th of the preceding month; Final Space Reservations by the 28th of preceding month, complete plates received by 30th of month previous.

SUBSCRIPTIONS: U.S.A. and Canada, $5.00 for One year; $10.00 for Three Years. Single Copies (Current Issue), 75 cents. Single Copy Rates for Back Issues, $1.00. Foreign Rates, $7.00 per year; three years, $15.00

Published monthly and copyrighted 1958 by INDUSTRIAL PUBLICATIONS, INC., 5 S. Wabash Ave., Chicago 3, Ill., U.S.A. Maurice P. Driscoll, President; F. L. Steinhoff, Exec. Vice President & Treasurer; F. J. Amstadter, Secretary.

BRICK AND CLAY RECORD is indexed by Engineering Index, Inc.

Industry Is Busy Building

If there is one outstanding trend in the industry now, it certainly seems to be toward building and modernizing. In looking through the news pages of the last three issues, and in an advance reading of this one, we've counted well over twenty items of buildings, modernizing and expansion.

More tunnel kilns are being put in, plants are buying new manufacturing equipment, research labs are being built or expanded, new buildings are going up, in all sections of the country. One Canadian plant has recently announced a $4 million expansion . . . and this in an operation that includes a brand new plant opened in the past year.

The reasons behind this building boom are several. First, of course, this is the slack season for many plants, the best time to get this work done. It also seems to indicate to us that the recent business lag is rapidly coming to an end.

But the primary reason, we think, is that these plants are aware of the advantage of "Building Before The Boom." They realize, as is generally predicted in the industry and outside it, that giant increases in business are just ahead, in the Sixties. They know it's better to be prepared in advance, rather than trying to catch up later. They also know that prices in years ahead are just not going to go down . . . that building and modernizing is cheaper today than it will be ever again in the foreseeable years.

They know that competition will, in all ways, be tougher and that the inefficient, outdated plants will be hurt most.

They know that the in-development back-up block can change the entire industry, probably tripling it's size. They know they're going to have to be more alert than ever for changes, new products, better methods, higher efficiency.

This trend—uniform throughout the industry in pipe, brick, refractories and lightweight aggregate—is well-illustrated in this issue's Refractories section with these plants aiming for better product made in a better way.

The basic point though, no matter how you interpret this trend, is that the rise in plant expenditures is on an upward curve . . . the trend is to building, today!

The Editors

NEWS OF THE INDUSTRY

Marion To Build 300' Tunnel Kiln

Marion Brick Co. has announced that a contract has been let to Allied Engineering Div., of Ferro, for an additional 300' tunnel kiln at the Caledonia, Ohio plant. The addition will bring production to slightly over 100 million brick per year, from the previous 78 million; this production figure is for the two plants operated by Marion.

James A. Hedgpeth has been appointed vice president in charge of production of Marion Brick Corp., according to an announcement by W. S. Merriman, company president.

Hedgpeth, before joining the Marion, Ohio, firm, had been plant manager with Borden Brick & Tile Co., and prior to that worked for Carolina Brick Co.

$800,000 Expansion Planned at Henderson

Machinery orders reportedly have been placed and preliminary construction work begun on an $800,000 addition at Henderson (Tex.) Clay Products Co., according to an announcement by Noble Davis, president.

The announcement was made at the Henderson annual Christmas party.

Production will be upped to 250,000 brick daily, Davis said. The expansion will provide an additional tunnel kiln 421' long plus two twin track dryers, each of these 184' long. The additions are expected to be completed by July, 1959, Davis said.

Plans and supervisory work will be by Harrop Ceramic Engineering. Just three years ago plant capacity was tripled. All plant departments will be expanded proportionate to the addition's needs. The plant at present has 3 tunnels, two short and one long.

Oswald Moves Office, Appoints New Man

Oswald Refractories Co. have announced that the company has moved to new, larger quarters in the Brentwood Bank Building, 1401 S. Brentwood Boul., St. Louis 17, Mo., effective Feb. 1. Office phone number and zone number stay as they were at the old address.

Richard E. Oswald, who has over 20 years sales experience, has joined the Oswald firm in a sales and service job.

Look Building Uses Adel Brick

A new $2.3 million Look magazine building in Des Moines, Ohio, used the Duramic glazed turquoise exterior brick of Adel Clay Products Co., with sales offices in West Des Moines. The new building, shown above, houses the subscription offices of the magazine. Adel's two plants are in Centerville and Redfield, Iowa.

Amvit Declares Extra Dividend

In addition to their regular quarterly dividend, American Vitrified Products Co., Cleveland, has declared an extra stock dividend, according to an announcement by E. L. Miller, president.

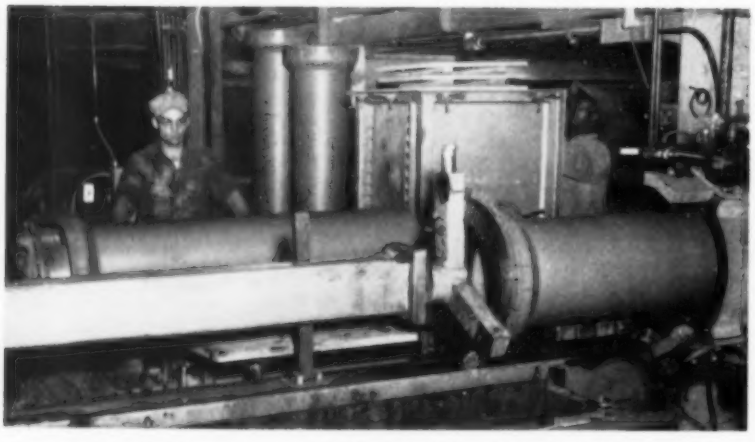
The regular quarterly dividend of 30c is payable December 22, with the extra stock dividend of 4% payable January 15.

Ironton Adds Handling System

A modern bulk handling system for raw materials has been added to the Refractory specialties Dept. of Ironton (Ohio) Fire Brick Co. The unit will handle materials from hopper cars, boxcars and trucks. Six hundred tons of raw material storage will be possible when the project is complete.

Electronic controls will be used for weighing and batching, with up to six raw materials able to be combined into a one-ton batch. Weighing time for each batch will be only 30-45 seconds, according to Donald R. Smith, division manager. The system, expected to be complete in early February, will be in a new building.

Robinson Installs Horizontal Auger Press



A new horizontal auger press, installed at the Mogadore, Ohio plant of Robinson Clay Product Co., will be used to extrude 8 to 12" vitrified clay pipe, in standard and extra-strength, to 5' in length. Press operation is virtually automatic. The Mogadore plant also manufactures the Wedge-Lock clay pipe joint.

Green Announces Plans For $2 Million Plant

Wm. S. Lowe, President of the A. P. Green Fire Brick Company, Mexico, Missouri, has announced plans for the construction of a new $2,000,000 plant for the manufacture of basic refractories at Tarentum, Pa., about 20 miles northeast of Pittsburgh.

Lowe also announced completion of arrangements for a $6,000,000 institutional loan. Of this sum, $2,000,000 will be used to re-finance an outstanding loan. The remainder will be divided between the Tarentum plant and a program of additional equipment for the production of new products in the Mexico, Missouri, plant and other existing domestic plants. First unit of construction will consist of about 50,000 square feet under roof. The size of the plant site allows space for future expansion.

This new plant at Tarentum will produce a full line of basic refractories consisting of magnesite, magnesite-chrome, chrome-magnesite, and chrome products. Production will also include a complete line of basic specialty refractories.

A considerable amount of the remaining funds will be spent at the main plant at Mexico, including completion of the new Research Center.

Wm. G. Maloney, Superintendent of Service Departments, from the Main Office at Mexico, Missouri, has been appointed Plant Manager and will take over his duties during the construction of the plant and installation of equipment. Ray A. Witschey, of the same office, is also being transferred to Tarentum as Sales Engineer.

The Pittsburgh Sales Office of the A. P. Green Fire Brick Company will be consolidated with the new plant office and will be under the direction of J. B. Allardice, District Sales Manager, assisted by Robert E. Fitzmier and Robert W. Highley. The plant will operate as the A. P. Green Fire Brick Company, Tarentum Division.

25c GladMcB Div.

Directors of Gladding, McBean & Co., have declared the regular quarterly dividend of 25c per share payable January 23, according to an announcement by R. A. Eccles, secretary.

NICE Announces Ceramic Engineering Award

Annual award program, to honor the nation's outstanding young ceramic engineer, has been announced by Wayne Deringer, president of the National Institute of Ceramic Engineers. Each year one man will receive the award for Professional Achievement in Ceramic Engineering.

The 1958 PACE award will be presented at the next NICE meeting in Chicago on May 17. Nominations are open to all branches of the ceramic industry, with any individual or group allowed to enter one or more nominees. Nominees can be between 21 and 40 years old.

Nomination blanks are available through the PACE Award Committee, National Institute of Ceramic Engineers, 4055 N. High St., Columbus 14, Ohio.

A. D. Johnson Dies

A. D. W. Johnson, sales representative for Adel Clay Products Co., with plants in Redfield and Centerville, Iowa, died at the age of 72 at Anoka, Minn., recently. He had been with Adel 28 years. The Adel sales office is in West Des Moines.

SCPI TV Show Planned for Feb. 24

SCPI has announced that the closed circuit television program planned for architects will take place on Feb. 24, with the showing planned for 14 cities.

These cities are New York, Philadelphia, Washington, Raleigh, Atlanta, New Orleans, Pittsburgh, Cleveland, Columbus, Detroit, Chicago, Denver, Hamilton and Toronto.

Participants in the program will include Paul Rudolph, AIL, chairman of the Yale Univ. Architectural School; Otto L. Nelson, vice president in charge of housing of New York Life Insurance Co.; Fred Severud, consulting engineer with Severud—Elstad-Krueger Assoc.; John B. Kelly, mason contractor from Philadelphia; Harry C. Bates, BM&PIU president.

Introductory remarks will be made by Edmund R. Purves, FAIA, executive director of AIA. The name of a nationally famous moderator will be announced later.

The hour long program will cover such topics as "Aesthetics in New Construction", "Ultimate Building Costs", "The Importance of Structural Flexibility In New Construction", "Productivity and Workmanship".

Architects in the 14 cities will be invited by the local clay products industry organization to be their guests in the event, with other details to be announced later.

These are the men to be featured on the SCPI closed circuit tv program: from left, Nelson, Kelly, Rudolph, Severud, Bates.

NEWS OF THE INDUSTRY

Penn Association Elects Horning

At a combination meeting, Roy A. Horning was elected president of the Pennsylvania Brick & Clay Products Assoc. The combined meeting was of the Penn. group and the Mid-Atlantic SCPI region. Horning is with Lancaster Brick Co.

Other officers elected include John Morrison of Auburn Brick Co., treasurer; Walter M. Whitehill, secretary and promotion director.

The SCPI Mid-Atlantic group elected Morriss Corbman of New Jersey Shale Brick & Tile Corp. as their president; Charles Alwine of Alwine Brick Co., at treasurer; Franklin G. Ibach, secretary.

Pres. Crossan of Metropolitan Dies

William A. Crossan, 47, president and general manager of Metropolitan Brick Co., Canton, Ohio, died Dec. 25. He had been a hospital patient some days with inoperable ulcers.

The company announced that Donald J. Renkert, former president and present board chairman, would resume the presidency.

Crossan had been president for two years. He began with National Fireproofing Co., in Canton, eventually becoming plant manager. He later was transferred to Natco headquarters in Pittsburgh and was vice president of this firm when he joined Metropolitan as general superintendent in 1946. He was a Metropolitan vice president-general superintendent when promoted to president.

TRI To Meet April 2-3

Executive secretary Avery C. Newton has announced that the 1959 Factory Operators Meeting of TRI will be held April 2-3 at the Tiger Hotel, Columbia, Mo.

Plant tours during the meeting will visit the Fulton plant of Harbison-Walker Refractories, the North American Refractories Farber plant and Wellsville Fire Brick.

Correction

In the December story on Dixie Fire Brick Co., we incorrectly noted plant location as Bessemer, Ala. The plant is actually at Kimberly, Ala.

Atlas To Switch From Tile to Brick

Atlas Brick & Tile Co. has switched their operational plans to brick manufacture instead of tile as originally proposed. Atlas has proposed construction of a plant at Shuqualak, Noxubee county, Miss. Primary reason for the switch is because of financing. The company can establish the brick operation for $700,000 capital, as compared to $1.5 million for tile. The plant proposes to make white, buff, roman and norman brick plus "smooth screening tile."

Soviet Ceramic Reports Now Available

Complete English translations of 63 papers covering Soviet research in ceramics, including refractories, are now available from Consultants Bureau Inc., 227 W. 17th St., New York City 11.

The collection, in three sections, is titled "Soviet Research in Glass and Ceramics." An earlier collection is also available. Tables of contents are available at no charge from the publisher.

Ottumwa Shows New Buff Tile

Ottumwa (Iowa) Brick & Tile Co. has introduced a new buff velour facing tile. C. T. Bridgman, research and promotion director for the Goodwin Companies made the announcement.

The buff tile was developed to fill a demand by architects for a tile that had a higher degree of size control and chipped less easily, Bridgman said. Only five units are being produced, with a 4x8x8 expected to be the most popular. Other sizes 8x8x8 and 4x8x4 plus, a soap and brick size.

All units will be shipped in cardboard cartons.

J. P. Soderstrum Dies

John P. Soderstrum, president of Grand Junction (Colo.) Brick Co., died Dec. 3, aged 69, of a heart ailment. He had been city manager of Grand Junction from 1930 to 1939.

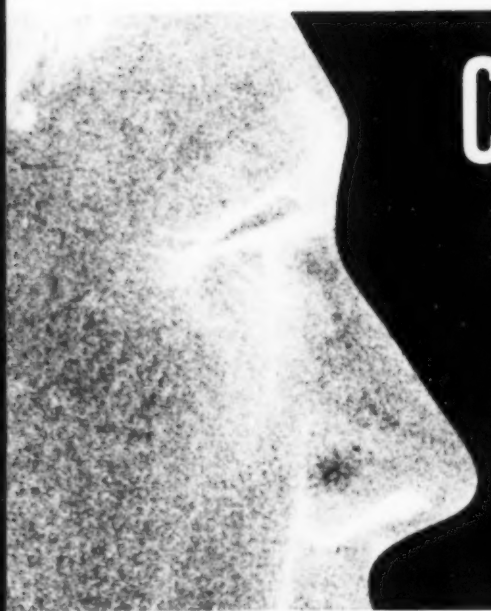
H-W Moves Into New Garber Lab

The Garber Research Center of Harbison-Walker Refractories Co. has been moving into the new research facilities of the Pittsburgh company, as can be seen in this photo. The staff is reported to have moved in, soon after January 5, following virtual completion of equipment installation.

Pemco is of

TWO MINDS about

CERAMICS



One mind listens to—and understands—your need. The other mind—a storehouse of knowledge and experience—finds the way to give you what you want or need. Many times, this second mind—a curious and probing mind—is able to anticipate your need and make it available to you before you need it.

Pemco minds have performed in this dual role for nearly fifty years.

RESEARCH AND A FLAME

PEMCO

Ceramic frits, inorganic pigments, vitrifiable glass colors

BALTIMORE 24, MARYLAND

NEWS OF THE INDUSTRY

Tate Named Assistant To H-W Exec VP

Carl A. Tate has been appointed Assistant to the Executive Vice President of Harbison-Walker Refractories Co., it was announced on January 2, by E. T. Hile, Vice President In Charge of Manufacturing.

Thomas E. Ralston has been named to succeed Tate as General District Superintendent.

A native of Clearfield, Pennsylvania, Tate first became associated with Harbison-Walker in 1930, as assistant to the chemist at Clearfield Laboratory, but left the following year. He returned to the Laboratory in 1933, and has since served Harbison-Walker as: Foreman, Clearfield No. 2 Works; foreman, Chester Works; Superintendent of Templeton Works; District Superintendent for Kentucky and Portsmouth Works; and General District Superintendent, the position in which he was serving at the time of his present appointment.

Stephen Miller Opens Refractory Distrib.

Stephen E. Miller, a sales engineer for 10 years for Nock Fire Brick Co. of Cleveland, will open his own firm, Miller Refractories Co. to distribute for Sivad Ceramic Corp., of Oak Hill, Ohio, in an eight county area in northeastern Ohio.

The Miller firm, in Cleveland, will be at 2719 E. 75th St.

Cash Russell Dies

Cash C. Russell, 63, superintendent of Goshen (Ohio) Brick Co., died Dec. 2 two days after being admitted to a hospital for a heart ailment. He had been the Goshen superintendent since 1940. He had been in the brick business 51 years, at Shawnee, Newcomerstown and Midvale, Ohio.

Robinson Makes First Overseas Shipment

The first direct overseas shipment of fire brick, by boat from Cleveland, was made recently by Robinson Clay Product Co., of Akron, Ohio. The 127 ton cargo of 33,000 fire brick, packed in 94 export crates, was sent via the St. Lawrence river to La Guaira, Venezuela. In the above picture are F. D. Gibbens (left), sales representative and C. L. Panatzer, assistant traffic manager overseeing the first shipment.

Brick Men's Sons Visit Chattahoochee

Sons of some prominent structural clay members, in the junior and senior classes at Clemson College, recently visited the Chattahoochee (Ga.) Brick Co., along with others in their classes. Indicated by arrows, brick men's sons are Jeff Bickerstaff of Bicke staff, Inc.; J. B. Edwards Jr., Reliance Clay Products; John Whitaker, Carolina Ceramics; Edgar Miller, Merry Bros. Brick & Tile; William and Boyd Miller, Miller Equipment Co. Paul Clark of Chattahoochee (holding hat) conducted the tour for the Clemson men.

50¢ Narco Div.

At the regular board of directors meeting on Oct. 27, directors of North American Refractories Co., Cleveland, declared a cash dividend of 50 per share on stock of record Dec. 31, payable Jan. 15, 1959.

R. H. Pierce Dies

Robert H. Pierce, 77, onetime chemical engineer of Harbison-Walker Refractories Co., died of a heart attack Nov. 2nd at his home in Pittsburgh.

J. M. Griffith Dies

Joel M. Griffin, 58, salesman for Major Brick Co. of Henderson, Tex., died Nov. 21 after a short illness.

John E. Clark Named SCPI Promotion Director

John E. Clark has been named Director of Promotion for the Structural Clay Products Institute, national association of brick and structural tile manufacturers, Douglas Whitlock, SCPI Board Chairman, announced. He replaces E. F. "Al" Walsh, who resigned from the Institute in December to accept a position with Music Corporation of America.

Clark has been with the Promotion Department for the past two years and took an active part in two national tours of SCPI brick and tile sales meetings and home builder merchandising programs. Before joining SCPI, he spent ten years in sales promotion work for the automobile industry.

Roy Howard Retires From Material Service

Roy B. Howard, brick department manager of Chicago's Material Service Corp., has decided to retire as of Feb. 1 after thirty years service with the company.

For fifty years Howard has been a face brick distributor in the Chicago area, starting in 1908 as a salesman with the Jenkins & Reynolds Brick Co. In 1914, Meacham & Wright Brick Co. bought out the J&R firm, and in turn were taken over, in 1922 by S. S. Kimball Brick Co.

Howard eventually became a director of the Kimball company, where he stayed until 1926. At that time he organized and became president of the Howard-Matz Brick Co., with the latter firm merging with Material Service in 1929.

John Clingan Dies

John R. T. Clingan, 62, former vice president of Valentine Fire Brick Co., of New Jersey, died of a heart attack Dec. 13.

Alliance, Dee Join CFLI

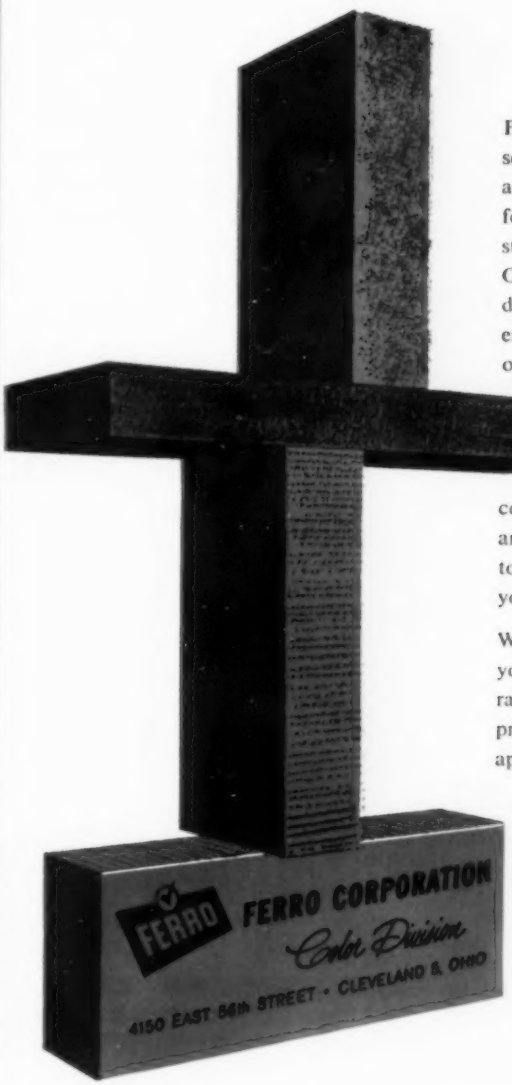
Membership in the Clay Flue Lining Institute has been increased to 12. Two new members who have joined are Dee Clay Products, of Bloomingdale, Ind., and Alliance Clay Product Co., Mifflinville, Pa. The membership total is the largest since CFLI organization.

James W. Wilcox has been named to the CFLI board of directors for Alliance, and Herbert C. Miller was elected for Dee.

Builders to Handle Robco Glazed Tile

Builders Brick Co., of Seattle, has been named an authorized dealer for Robco structural glazed tile, according to an announcement by R. C. Houlahan, Builders president. The company will distribute the Robco product for Washington west of the Cascade mountains and north from Lews and Grays Harbor counties.

When you color Brick...



Ferro can work with you to set up techniques, processes and quality controls . . . for glazing, engobe, body stains, or sandblasting. Our inorganic colors — developed from long experience in all kinds of brickmaking — retain color uniformity and light and heat stability through ton after ton of the brick you make.

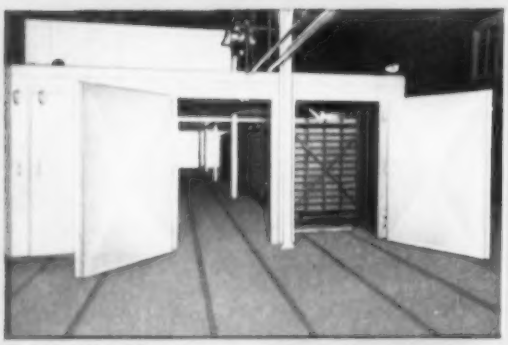
Write us today, describing your equipment, firing ranges, type of clay and proposed method of applying color.

5309 South District Blvd., Los Angeles 22, California. Ferro Enamels (Canada) Ltd., Oakville, Ontario, Canada.

Foreign plants in Argentina, Australia, Brazil, Chile, England, France, Holland, Japan, Mexico, South Africa.

HEAVY CLAY DRYERS

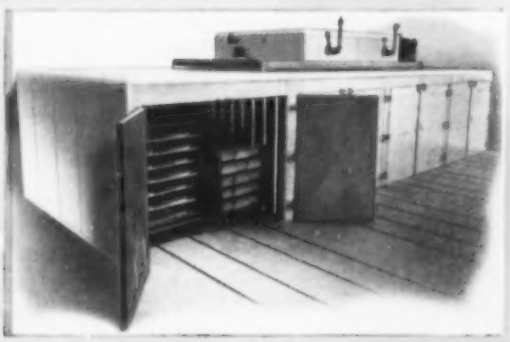
...the product and problem dictate the design



Car Type Humidity Controlled Fire Brick Dryer.

The LANLY Company's geographical location is near the heart of the country's clay products producing area. This has contributed to their 20 year acquisition of the essential knowledge and experience required to design and build the finest in heat processing equipment for the exacting varied applications in the industry.

Unprecedented competition, coupled with ever increasing costs has made it mandatory for clay products manufacturers to strengthen their relative positions in the field through the replacement of outmoded dryers. This has been accomplished in a large measure by their coordinated action with the LANLY organization.



Rack Type Humidity Controlled Refractory Dryer.

Progressive Type Humidity Controlled Quarry Tile Dryer.

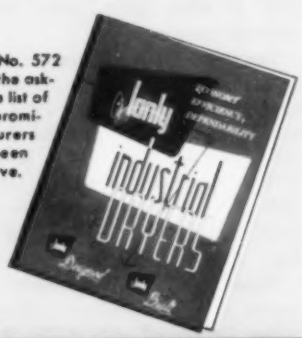
Find Your Representative In The Yellow Pages

THE lanly CO.

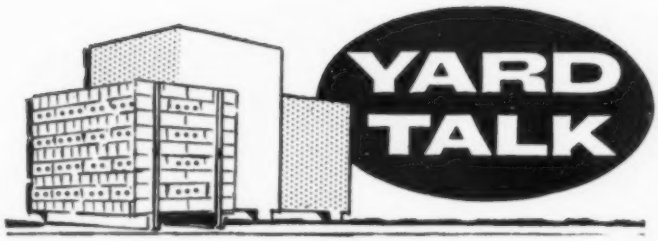
CERAMIC OVENS & DRYERS

2800 Euclid Avenue • Cleveland 15, Ohio

LANLY Bulletin No. 572 is available for the asking. It contains a list of some of the prominent manufacturers LANLY has been privileged to serve.



Atlanta, Georgia • Birmingham, Ala. • Boston, Mass. • Chicago, Ill. • Cleveland, Ohio
Columbia, So. Carolina • Columbus, Ohio • Detroit, Mich. • Houston, Texas
Pittsburgh, Pa. • Rochester, N. Y. • San Francisco, Calif. • St. Louis, Mo.



We've noticed, just in the last couple of months, that the brick and clay industries are really beginning to move again, after a long spell of inactivity regarding re-building or modernization. The news pages these past couple of months (including this issue) seem heavy with items about plants putting in tunnel kilns, re-building, or building new plants.

One such plant is American Vitrified Products Co., with home office in Cleveland. Their recently-acquired White Hall, Ill., plant is undergoing extensive renovation, according to Pres. E. L. Miller. A gas fired tunnel kiln, 8 new driers, pipe-making machinery, and a new 430x150′ steel building are part of the rebuilding. Miller figures cost will be from $700,000 to $1 million. Work here is more than just modernization; it's more like a complete re-building, Miller says.

Bill Conaway, resident manager at the Clay City Pipe plant in Montezuma, Ind., tells us that he's completed re-building of a 36′ periodic, using B&W insulating brick for the crown, with their own fire brick in the side walls. They've also added a line of blush, or pink, buff in normans and 8″ to their regular line of buff.

Illinois Clay Products Co., with their plant at Goose Lake, Ill., has added a $15,000 dry press for manufacture of ladle sleeves, H. O. West, president, reports. They're also planning to add sleeves to their line.

Here's what a couple of other companies are doing: Purington Brick Co., in Galesburg, Ill., tells us that they're currently installing package setting in periodic kilns. Another Illinois plant, Diller Tile Co., in Chatsworth, has built a 60 x 100′, 20′ high building for clay storage. Kelsey-Ferguson Brick Co., Sam Ferguson says, now has Robert Brickhouse as their superintendent. President Sam also reports adding of a couple of driers with necessary fans, motors.

A new man—Jerry Reinhold—is now on the sales staff of Richards Brick Co., Edwardsville,, Ill., according to C. T. Richards, treasurer. Richards also says, "We are currently razing our 160′ stack since recent modernization has made it necessary to our operations. Our contract for razing the stack is well over double the original cost thereof when it was erected in 1912. Deterioration of top section of stack when idle made it a hazard." Costs have gone up, BCR editors feel, when it costs more to tear something apart than to build it.

A new product, a Shamva Mullite pellet made by the Refractories Div., H. K. Porter Co. Inc., is now in production. Porter says they have a new process that lets them sell and produce the ¼″ to ⅞″ Shamva pellets at "attractive prices" to major oil refineries. The pellets are used as inert supports for the active catalyst in fixed bed converters. Content is about 70% alumina; rest is essentially inert.

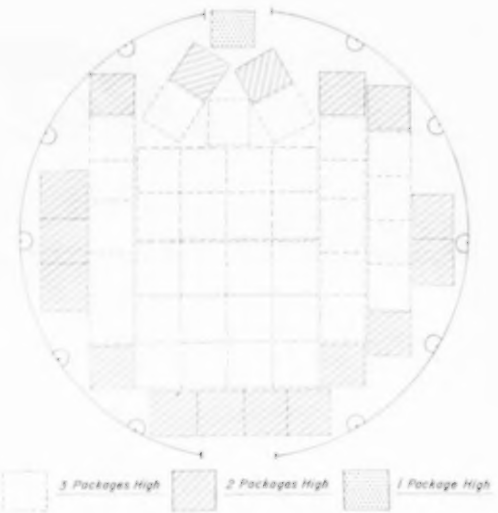
Here's some items about brick people's activities: L. W. Kasten, president of Kasten Brick Co. in Jackson, Mo., has been elected a member of the board of directors of Associated Industries of Missouri; three

(Continued on page 89)

Brick Men Do Post-Convention Sail-Fishing

Following the SCPI Houston convention, some members of the brick industry had good luck fishing near Acapulco, Mexico. Left to right are Heinie Olson, Twin City Brick Co. of St. Paul; Allen C. Cole, L. E. Shaw Brick Co. Ltd., of Canada; Houston L. Crumpler, of Crumpler Brick & Tile Co., North Carolina. These three were among many who made a tour of Mexico following the meeting.

Double brick, tile line uses Additive-A, hot water pugging, packaging and special setting; steady rebuilding of plant, methods



Above is overhead drawing of kiln full of tile packages, showing how Kalo sets in kiln.

150 Manhours - - -

Kalo Saves That By Fork Unloading

Fork handling of their wall tile, from the kiln on, is one of the most interesting aspects of Kalo Brick & Tile, near Fort Dodge, Iowa. The company makes a double product line with a full selection of backup and facing tile plus a wide range of brick.

The plant, some 10 miles southeast of Fort Dodge, has split the plant with on production line and some periodic kilns reserved exclusively for tile, and another production line for the brick.

The brick, both red and buff, is made in three main textures—stipple, Rockface and wire cut—in modular, standard, norman and SCR.

The tile line includes partition, backup, 4 lines of face in glazed or unglazed, drain tile, 8x8x16″ backup and face; also 4x8x16″ with headers of the same size and 4x12x16″ partitions. There are approximately 150 different kinds of hollow ware produced according to size, color and grade.

Line Splits at Bins

Up to the pugmill feed, the operation of the plant for brick and tile making is the same. The pit is about 3 miles from the plant, with another pit not fully opened yet. A P&H $3\frac{1}{4}$-yd. shovel digs the clay and loads into three trucks that haul the clay to the plant.

The pit is worked at two levels, with the bottom 30′ a gray shale and the top 30′ level a red burning and chocolate burning shale. Kalo shoots the gray shale and lets it weather as long as they can. Eventually each of the three clays goes to three separate storage bins at the plant. The company has stripped some 40′ of overburden, but there's plenty of clay underneath. Drill tests have shown clay as deep as 165′.

From the bins, rubber belt conveyors move the shale to the two Eagle 9′ dry pans. Kalo adds some water at the pans to help control dust. Clay moves up by bucket elevator after grinding. Kalo likes very much a protective system that prevents flooding of the elevator.

Coupling, Clutch Used

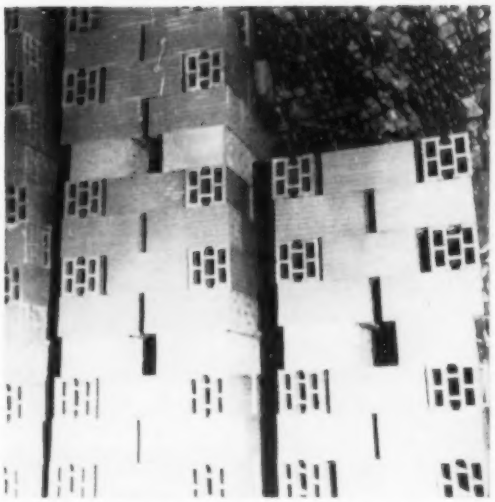
The elevator is driven through a speed reducer and overload clutch that are direct-connected to the elevator head shaft. When the elevator becomes overloaded the clutch slips, protecting the driving motor.

At the same time, a sensing device attached to the head-shaft of the elevator senses the elevator slowdown and interrupts the electrical circuit of the motor driving the dry pan. Used in this system are a Falk flexible coupling and clutch.

The screens, two Tyler Hummer 4x10′ heated, can screen to 14 mesh with tailings recirculated. From the screens, the ground clay goes to hollow block bins with wood partitions. Each bin has a Meco disc feeder, with these put in about 4 years ago.

An F-R-H Hummer machine is used for brick and an F-R-H Jr. machine for hollow ware. Each is equipped with Mix-Max knives, with the machines running at about 25-27″ of vacuum. The plant uses Additive-A, putting the additive in separate from the pug water. The Additive-A is kept in a 6,000 gal. tank, with two pumps, one feeding the brick and one the tile line.

Tile are removed from kiln in this package.



Here's how tile packages look after being set. Three high, two high follow curve of crown.

Tile Kilns

An interesting feature of the plant is that Kalo pugs with hot water. Said to help in the dryer cracking problem, the water is heated to about 150-170° although it can go higher if desired. Water is heated by a little gas-fired boiler with one hot and one cold valve and an automatic mixer so water of desired temperature can be had.

From the brick-line machine, powered by 150 hp, the brick go to a Chambers cutter. Brick are package set on the dryer cars, with about 528 8" brick per car. Normally the plant uses only 3 hackers.

Dryer cars move by electric transfer to the 20 tunnel dryers used exclusively for brick, holding 11 cars each. Heat for the dryer is supplied by waste heat with an auxiliary Hauck proportioning gas burners equipped with controls to allow heat adjustment. New York blower fans supply the heat to the dryers.

Two Day Drying

The brick take about two days in the dryers, sometimes less, with 220° the top temperature. The dried brick are then set in the kilns by Clark fork trucks equipped with Bickerstaff attachments.

Kalo uses seven kilns, all 30', for brick. There are 264 brick in a cube, with two cubes to a dryer car, totalling about 75,000 brick per kiln. The plant has worked out its own setting pattern with all brick straight set, none put in circles.

The kilns are gas fired, using Hauck dual-fuel burners, with oil for standby. Some secondary air is supplied to the burners by General blowers, using about 20 oz. of air pressure.

In firing, Kalo has an oxidizing condition all the way, trying to hold CO_2 to not over 8%. Top temperature is 1970-1980° for the red brick and 1940-1950 for buff. Kalo uses a booster during the water smoke period, with the booster hooked onto the stack. Firing time is about 4½ days for the brick, and about the same for the hollow ware.

Kiln Unloading

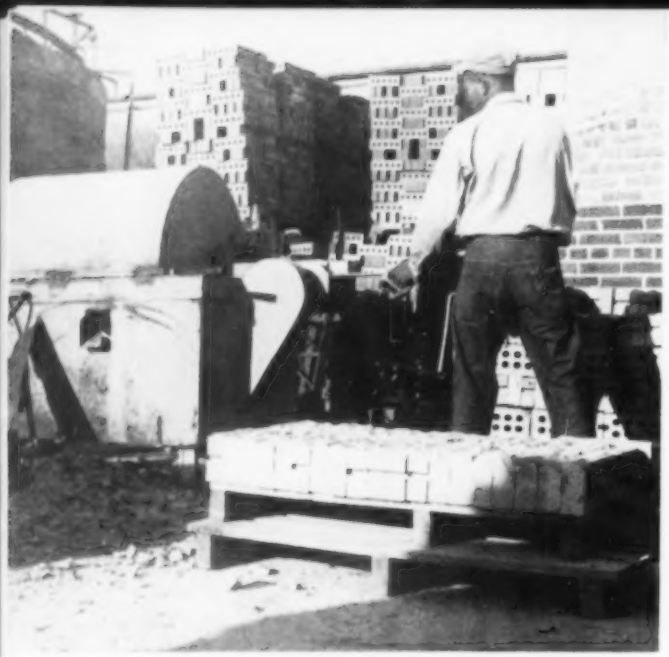
The company reports that fork unloading of the kilns now takes one man one day, compared to the hand unloading days when it took 10 men two days to unload a kiln. The brick go right to storage with, by the way, most of the plant's working and storage area paved.

Some strapping, with Acme equipment, is done to order. The plant has a Rockfacer that is used, again to order, on any of the brick including the SCR. Plant manager A. D. Schnurr reports growing sales of this Rockfaced brick. Brick shipments are made about 80% by rail with an output by Kalo of about 40,000 per day.

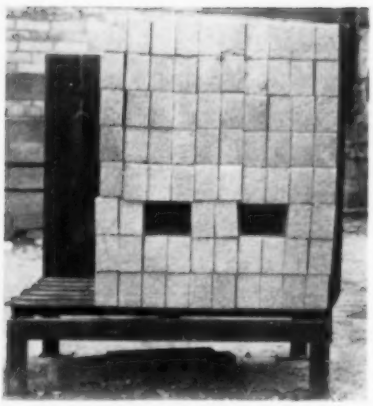
Getting back now to the tile line, the F-R-H Hummer is used with an F-R-H cutter. Two men hack onto the double level cars, getting some 96 8x5x12 tile onto each car. After forming and cutting, the ware is placed in the tunnel dryers, of which there are 42 for the hollow ware line.

Drying time and procedure is about the same for the tile as for the brick, as is the use of hot water pugging and Additive-A.

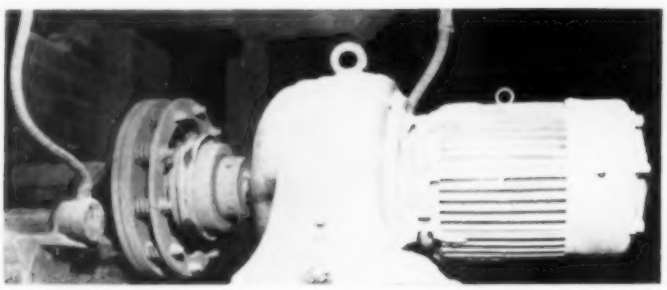
(Continued on next page)



Plant uses a Rockfacer with good success.



Brick pack built in jig, ready for strapping.



This is the clutch, motor used in the automatic control system for dry pan, elevator.

KALO Continued

After drying, tile go by electric transfer car to the kilns, where the tile are set in packages. Since so many shapes and sizes are made, the packages obviously must vary considerably. Kalo is still experimenting with, and changing, packages. They've found that they have to package set differently for the tile that are to be salt glazed.

Firing time and operation is roughly the same as for the brick, with the rest of the 19 kilns used for the tile. The tile are unloaded and moved to storage by the Bickerstaff-equipped forks, with comparable man power savings. All forks at Kalo are powered by LP gas.

Steady Modernization

Kalo didn't have the facilities or budget to do a complete, all-at-once modernization program, but adding to equipment and methods has been steady over the past few years.

For example, the conversion to oil-gas firing, put in during 1952, cost some $30,000. The plant has 30,000 gallons of oil storage. Another expensive change was to the full use of fork lift trucks, in 1956. A year ago the Kalo people completely revamped their electrical work, putting in all new motors and switches and drives with gear reducers.

Other recent additions are the heated screens, two years old, and the disc feeders, put in about three years ago.

The plant has strapped the hollow ware, and brick, during the last two years, using the West system with Flink buggies sent out on the trucks. Kalo would do more strapping but first needs a production set-up with jigs, etc.

The plant, well-paved and with the paving maintained, is clean and well-kept.

Kalo management says that the renovation or modernization process, and the experiments and changes in methods, are by no means over.

The president and plant manager of Kalo is A. D. Schnurr, with J. W. "Jerry" Kiliper as superintendent and 2nd vice president.

Other officers are George F. Schnurr, vice president and sales manager; Glenn R. Schnurr, secretary-treasurer and office manager. G. E. Schnurr is general manager of Kalo.

The gas-oil installation at Kalo was made by Brown Engineering, of Des Moines, and the electrical power changeover by Gem, of Fort Dodge.

Tips on firing, drying, buildings **Part II**

Building Tomorrow's Plant Today

By
Dwight B. Hendryx
Consulting Engineer

While the mechanical setting of brick in periodic kilns by means of fork trucks has extended the life of many plants, very few periodic kilns will be built in the future. A few may be used for large sizes of sewer pipe, and possibly for some refractory brick. Even here, if a tunnel kiln is not practicable on account of the variation in size of the pieces to be burned, a shuttle kiln might make a considerable saving over the periodic units.

If a periodic kiln is needed, it is cheaper to build it with a steel shell and a 9" insulating brick wall and crown rather than to use the old style construction with walls 27" thick. The first cost of the insulated kiln is actually less than the older type. Mechanical draft rather than stack draft would be used, and it is usually better to connnect several kilns to one fan rather than to use separate fans on each kiln. Practically no heat is stored in the walls of kilns built of insulating brick, so comparatively little heat is available for the dryers, particularly when firing sewer pipe.

It is now pretty well realized that a tunnel kiln plant is a complete manufacturing process, not just a way of burning brick with less fuel. It can reduce the cost of manufacturing, drying, setting, burning, transportation within the plant, handling of burned brick, plant maintenance, and fuel.

At the same time, it can turn out a product more constant in quality, color and dimensions and with less losses. The addition of tunnel kilns to any old plant often accomplishes only a portion of these results. In fact, it is easier to design a new tunnel kiln plant than to try to add a tunnel kiln to an old plant.

Although numerous other problems are involved, the important thing in tunnel kiln design is to determine the limitations under which the ware can be dried and fired, and to design a kiln to carry the ware as safely and rapidly as possible through these parts of the firing process.

The principal difficulties usually occur in the control of oxidation and cooling.

On the other hand, kilns should never be designed to handle a specific clay, because next week the management is sure to open up a new pit. The kiln should rather be designed so that it can be adapted to a firing and cooling curve which will handle practically any type of material.

There is a great deal of discussion regarding the shuttle kiln. It is a substitute for the periodic kiln rather than for the tunnel kiln. Where a variety of large and small shapes have to be made from a material high in carbon or sulphur and the tunnel kiln might necessarily be slowed down to accommodate the larger sizes, the shuttle kiln may fit in very well.

The shuttle kiln will make about the same saving in labor as a tunnel kiln, but comparatively little reduction in fuel as compared to a good periodic

(*Continued on page 39*)

A noted engineer, in the conclusion of a two-part article, offers ideas on building or re-building of your plant, covering everything from kiln types to building painting. Part I appeared in December, page 38.

Hendryx

A Brick Man Visits Russia

L. R. Whitaker reports on the research, methods and machines used in Russian brick industry

A visa to Russia is now very easy to obtain. The visitor has a great deal of freedom. Through their tourist agency called "Intourist", the Russians are equipped very efficiently to handle the visitor with "Intourist" furnishing hotel, meals, interpreters, guides and automobiles.

These interpreters are college graduates who are neat, well dressed and intelligent. Many are women.

Tourists are treated with the courtesy that is expected to a visitor to any country. My visit to Russia was greatly helped by contacts through Mr. D. Dixon and others of England. The British brick and tile manufacturers have visited Russia and have good contacts with the producers of brick and tile and with the manufacturers of white wares, refractories, wall tile, and enameling.

The Russian officials accompanied me on some of the visits to the brick and tile plants of Moscow and near Leningrad.

The manufacture of brick and tile in Russia is similar to that on the continent of Europe where brick and tile are extruded much softer than in the U.S.A. Many brick are made by dry-pressing.

Soft Extrusion

The soft extrusion of brick and tile in Europe and many other parts of the world may be due to the fact that the original extrusion machines were man or animal powered. When mechanical power was introduced, the machines available were not of sufficient strength to extrude a stiff column. Brick and tile are hacked on individual pallets as the ware is not strong enough to withstand a superimposed load.

Soft extrusion has necessitated a different type of cutter which cuts one to two brick at each cycle. The cutters have a short platen so that in the backward movement this short platen does not swell the column at the die.

The European auger machines, which the English call a pug mill, are not built as sturdily as the usual machine made in the U.S.A. Provisions are made of various designs to prevent this soft mass from choking the de-airing section. It must be kept in mind that the Europeans are producing brick and tile of very short material where all the plasticity available is used by extruding these soft materials.

Their method of preparation of the clay is based on machines that grind their material in a soft state to 1/16" to ⅛" maximum size without the use of screens. Their usual machines are not adapted to prepare the stiff extrusion clay as used in the States. This European preparation of clay would require a separate paper for explanation.

Lightweight Bridges, Cores

An advantage has been taken of this soft extrusion in producing hollow brick and tile. The pressure required to extrude this soft column is low as compared with our method; consequently, the bridge and core structures contain a minimum of steel to choke the back of die. In some cases the core rods are floated to follow the path of clay flow and also off-set so as to follow the rotation of clay in the die due to the revolving of the auger.

These lightweight bridges and cores allow the European brick and tile manufacturers to produce a multiple number of holes in their ware. This produces a lightweight brick and make a saving in clay mined, clay prepared, a slightly higher percentage of water but less total water in the brick, less water to take out in dryer, less fuel to burn, less weight to ship and a claim is made as to the ware having more insulating value.

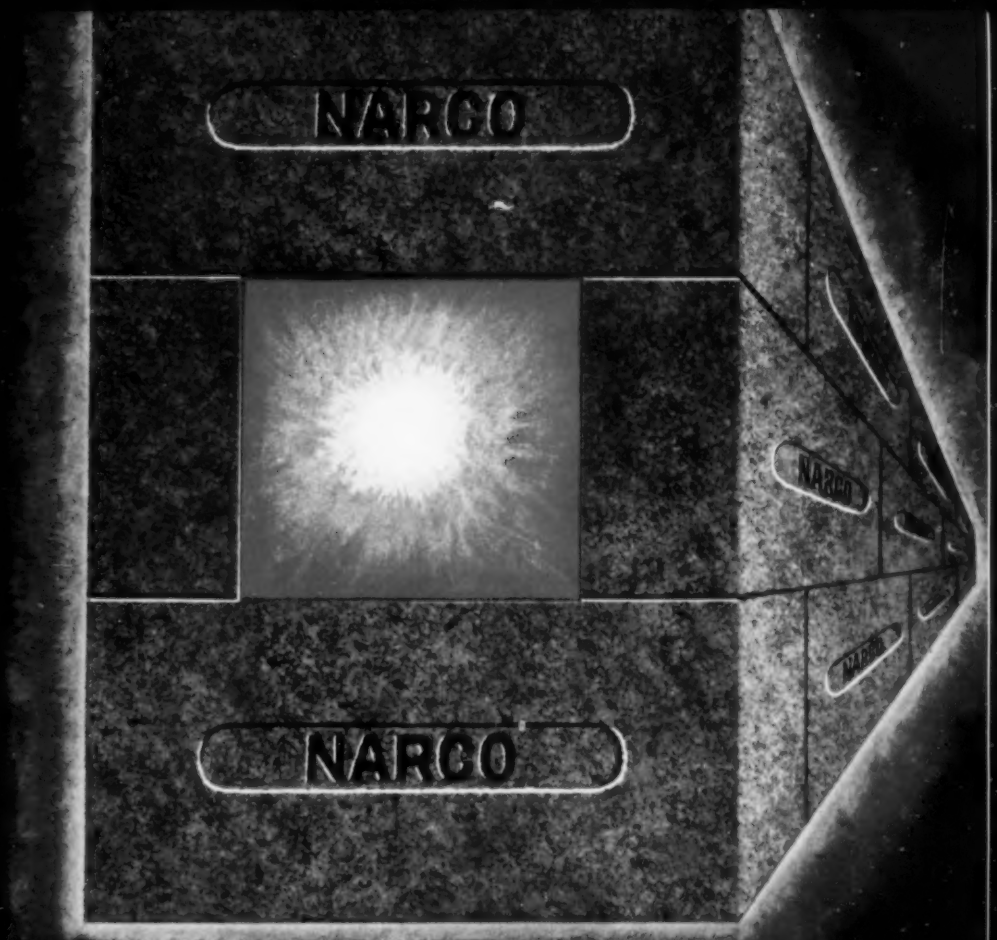
The soft clay on being extruded more nearly follows a hydraulic pressure pattern through the die giving less trouble in die balance, rather than the plastic flow and its eccentricities of an unbalanced flow of clay through the die of a stiff column.

The Keller company which manufactures a single wire cutter has developed an attachment which automatically hacks the brick and tile on a pallet.

In the Moscow area there are several brick and tile plants. The largest is the Beskudnivo brick plant with their present production 600,000 brick per day. There is a tunnel kiln plant at this factory which is nearly completed and planned to raise this

(*Continued on page* 92)

L. R. Whitaker of Carolina Ceramics recently toured Europe, with special emphasis on Russia. The man on the right is Ivan Gvosdarver who's a member of the Committee of Soviet Union Council of Ministers of Construction. Besides Whitaker (with the camera) others are, from left, Gvosdarver's deputy, the assistant manager of the plant, plant manager (tall man on Whitaker's left).



NARCO

BRICK:

- *Fire Clay*
- *Silica*
- *High Alumina*
- *Insulating*

(Also Mortars—Plastics Castables—Gun Mixes)

Quality-Controlled to Serve

. . . backed by over 120 years of experience in refractories
. . . nine modern, well-situated plants

MOUNT UNION, PA.

FARBER, MO.

DOVER, OHIO

CURWENSVILLE, PA.

ASHLAND, KY.

HAYWARD, KY.

. . . and the newest, most scientifically equipped research laboratory in the refractory business

WOMELSDORF, PA.

LUMBER CITY, PA.

LITTLE GAP, PA.

CURWENSVILLE, PA.
RESEARCH CENTER

NARCO

NORTH AMERICAN REFRACTORIES COMPANY

GENERAL OFFICES • CLEVELAND 14, OHIO

DISTRICT SALES OFFICES:

NEW YORK, N. Y. · PHILADELPHIA, PA. · BOSTON, MASS. · BUFFALO, N. Y. · PITTSBURGH, PA. · CHICAGO, ILL. · DETROIT, MICHIGAN · CINCINNATI, OHIO · LOS ANGELES, CALIF. · ST. LOUIS, MISSOURI

NORTH AMERICAN REFRACTORIES LTD. 191 Victoria Ave. South, Hamilton, Ontario

"Refractories for the Brick & Clay Industry"

Of all the industries which have contributed to the phenomenal growth of the United States and to its productive capacity both in peace and war, none has been more fundamentally essential than the *Refractories* industry.

Refractories Products—such as Firebrick, Castables, Plastic Firebrick and special Ramming Mixes, Cements, Mortars, Coatings, and Clays—are the means by which the energy in today's modern industrial furnaces is harnessed and controlled.

From these furnaces of industry come practically everything we use in our daily life.

All basic industries utilize *Refractories* in their processes—and they look to MEXICO REFRACTORIES and its co-ordinated divisions for the proper *Refractories Products* to meet their specific service conditions.

Research . . . Product Development . . . Quality Control . . . On-the-Job Service . . . These are standard procedures in our organization and are the reasons for our recognized leadership.

In the "Sure Hands of Experience"

MEX-R-CO

124

MEXICO REFRACTORIES COMPANY

MEXICO, MISSOURI

NILES FIRE BRICK DIV.—Niles, Ohio ● NATIONAL REFRACTORIES DIV.—Philadelphia, Pa. ● BIG SAVAGE REFRACTORIES DIV.—Frostburg, Md.

Canadian Affiliate: REFRACTORIES ENGINEERING & SUPPLIES, LTD.—Hamilton, Ontario, Canada

NORTH AMERICAN REFRACTORIES LTD. 191 Victoria Ave. South, Hamilton, Ontario

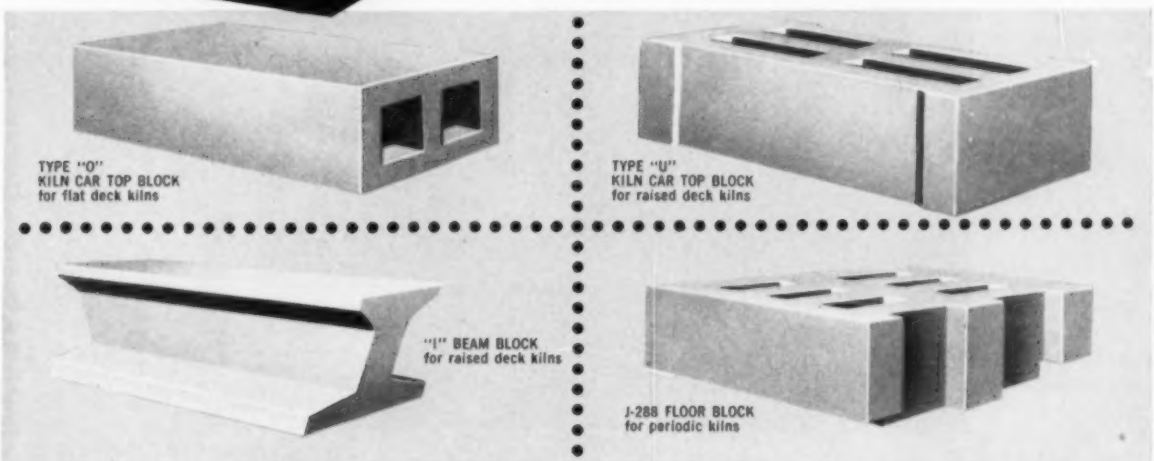
ROBINSON REFRACTORIES

Serve You Best!

New from Robinson!
High-Performance,
Low-Maintenance
KILN CAR and FLOOR BLOCK

It always pays to specify the complete line of Robinson Refractories. Take advantage of modern laboratory production methods, such as instrument-controlled firing, rigid quality control and expert engineering service. The Robinson name is your guarantee of quality. And a distribution system, unsurpassed, makes a complete line of refractories available to you at all times, through fifteen factory branches, in addition to Robinson dealers, strategically located throughout the Northeastern section of the nation.

Write for illustrated Complete-Line Catalog



Robinson Kiln Car and Floor Block are highly refractory . . . non-shrinking and non-spalling . . . have unsurpassed load-bearing properties. Available in a wide range of mixes, including two revolutionary research-developed formulas, designed to combat excessive thermal shock — THERMIX R-119 and R-127. Call the Robinson Branch nearest you. Your Robinson Representative will be glad to help you select the mix best suited to your specific application.

COMPLETE LINE FOR ALL YOUR REFRACTORIES NEEDS...

Fire Brick • Cupola Block • Ladle Lining Castable Refractories • Plastic Fire Brick Acid-Proof Cement • High-Temperature Bonding Mortar • Kiln Floor Block • Kiln Car Top Block

THE ROBINSON CLAY PRODUCT CO.
ESTABLISHED 1836
AKRON • OHIO

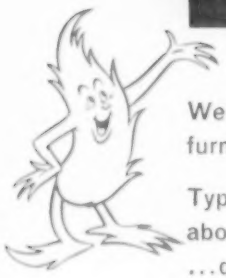
OVER 100 YEARS OF Quality and Service
EST. 1856

15 ROBINSON BRANCHES TO SERVE YOU BEST

Akron, Ohio • Albany, N. Y. • Baltimore, Md. • Bloomfield, N. J. • Boston, Mass. • Buffalo, N. Y. • Chicago, Ill. East Hartford, Conn. • Indianapolis, Ind. • Mt. Vernon, N. Y. • New York, N. Y. (Jamaica, L. I.) • Philadelphia, Pa. (Pottstown, Pa.) • Rochester, N. Y. • Syracuse, N. Y. • Concord, Ontario, Canada

FACTORIES: Dover, Ohio — Strasburg, Ohio

GMcB REFRACTORIES line the furnaces of Western Industry



We're pleased to have participated in the construction of major furnace units up and down the entire West Coast.

Typical of the installations are the three blast stoves and stack pictured above which are lined with GMcB high duty and super duty firebrick ... quality controlled to meet the exacting demands of western industry.

Whatever your refractory requirements for the Pacific Coast or adjacent western states, it will pay you to check with us first.

REFRACTORIES DIVISION

GLADDING, McBEAN & CO.

MANUFACTURERS OF FIRECLAY AND SILICA REFRACTORIES

Los Angeles • San Francisco • Seattle

DISTRIBUTORS FOR:

E. J. LAVINO & CO.–BASIC REFRACTORIES • JOHNS-MANVILLE–INSULATING REFRACTORY PRODUCTS • THE CARBORUNDUM CO.–SPECIAL REFRACTORIES

FIRST IN THE FURNACES OF WESTERN INDUSTRY

PRINCIPAL PRODUCTS

•

FIRE BRICK

WARCO XX,
High Duty

MULLITEX,
Super Duty

MULLITEX HB,
Super Duty,
High Burn

HI LUMITE 50
HI LUMITE 60
HI LUMITE 70
50, 60, & 70% Alumina Content, respectively

•

CASTABLES

A complete line of both Service and Insulating types, including
H & B CASTABLE and SUPER CASTABLE #32 (3000° F)
LITE WATE #50 Insulating
LITE WATE #70 Insulating

•

PLASTIC FIRE BRICK

WALSH PLASTIC FURNACE LINING

WALSH SUPER PLASTIC FURNACE LINING

•

MORTARS

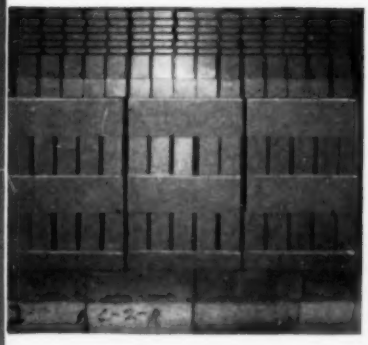
MORT-AIRSET, high temperature cement for air tight joints in all fire brick work.

METALOK, heat setting mortar for bonding fire brick to retain metal and slag.

Meeting the Challenge

of the Structural CLAY PRODUCTS INDUSTRY

Exacting Requirements of the Space Age are met and mastered in Walsh Refractories. From pit to lab to finished product—under strictest standards of quality control—Walsh sets the pace with increased clay reserves, improved research facilities and continued important additions to plants and equipment. With constant progress as the goal, Walsh sets its sights on playing an increasingly important role in the great refractories industry.



WALSH C-64 CAR TOP TILE

The amazing life span of Walsh C-64 Car Top Tile, with Warco XX, Dry Press Deck Tile, is credited to their unusual resistance to impact and spalling. Solid and stable, they withstand heavy loads. Can be used on any type of refractory car top base. The assistance of our Engineering department in meeting your particular requirements is available on request.

WALSH BB-161 SUPER PLASTIC

An airsetting plastic producing high strength at low temperatures, installations of which do not require immediate burning in. Strength increases as burned in temperatures are reached. Wire, write or phone for complete technical data.

WALSH MORT-AIRSET

An airsetting high temperature bonding mortar for laying up and surfacing high heat duty and intermediate duty fire brick and tile. Only Walsh Mort-Airset gives you all the "extras"... extra strength, extra workability, extra resistance to severe furnace conditions and temperature extremes... every performance characteristic you've ever wanted in a refractory cement.

WALSH K-11 RAMMING MIX

Fire Box Arches constructed of Walsh K-11 ramming mix demonstrate in full measure the ability to successfully resist high temperatures and severe thermal shock without deformation following extended periods of hard usage ... your assurance of exceptional service life at lowest cost.

WALSH REFRACTORIES CORPORATION — America's Best Clays

WALSH REFRACTORIES CORPORATION

101 FERRY STREET • ST. LOUIS 7, MISSOURI
FACTORIES AT VANDALIA, MISSOURI AND ST. LOUIS, MISSOURI

FIRE CLAY SPECIALISTS IN REFRACTORIES OF HIGH BULK DENSITY AND LOW POROSITY

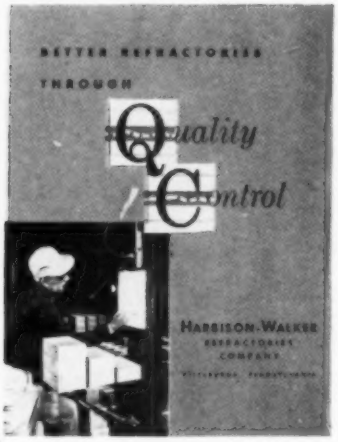
Harbison-Walker
quality control
assures predictable and uniform refractories performance

Through Statistical Quality Control, Harbison-Walker maintains within closest commercial limits, the highest standards of all characteristics upon which depend the best and most uniform refractory service. Comprehensive control procedure extends from the raw materials through every manufacturing detail with the aid of instrumentation and precise laboratory testing. By this highly developed technique, uniformity of product is achieved which assures predictable and consistently uniform refractories performance. It is possible to estimate service life more accurately and plan furnace campaigns with confidence. With this established uniformity of quality, operating interruptions are fewer and maintenance costs are considerably reduced.

Determining refractoriness by the "Pyrometric Cone Equivalent" method.

Screen analysis of Brick Mix is an important control operation.

Better Refractories Through Quality Control —Send for your personal copy.



HARBISON-WALKER REFRACTORIES CO. AND SUBSIDIARIES

World's Most Complete Refractories Service

General Offices: **PITTSBURGH 22, PA.**

Let Virginia Kyanite's FAMOUS PAIR Make Your Product BETTER

Blue Crystal Kyanite and its derivative Mullite meet manufacturers' most rigid requirements for ceramic and super-refractory components. High in alumina and low in iron this world famous pair resists high temperatures and imparts great strength to kiln furniture, fire-brick, ceramic tile, sanitary ware and many other refractory products. A wide variety of mesh sizes is available. We invite you to write for free samples and full details.

Ceramic engineering offers unlimited career opportunities.

KYANITE MINING CORPORATION

TELEPHONE YUkon 3-2311 • DILLWYN, VIRGINIA

Allied Engineering reports on precalcined, lightweight clay-structural blocks

For many years we here at ALLIED have propounded that structural-clay products must be made lighter in weight. We have also advocated the calcining of clay to overcome basic faults in traditional manufacturing methods. These problems arise from preforming the shape from crude clay, then firing at a finishing temperature to produce both an *accurate* predetermined size and a *satisfactory* finished surface and structure.

Production Advantages

All problems now experienced from drying and firing—such as shrinkage faults, unstable setting, shrinkage cracks, slabbing, pinholes, blistering, bloating, warping, black coring, red hearts or staining, popping, scumming and kiln marking—could be eliminated or greatly minimized with precalcined "body" materials.

Faster, safer firing cycles would result. Manufacturers would get much greater kiln production, almost quadrupled in some cases. Larger shapes and more complicated designs could be produced. (All of this has been proved in current production of certain refractories, porcelains and steatites.) Initial investment per unit of production would also be lower.

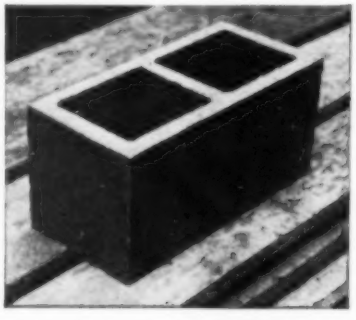
Sales Advantages

Beside major economies in production, these lighter weight clay-structural products would make possible other big savings for users. Freight or transportation costs, now a factor in considering the use of heavy-clay products, would be greatly reduced. Likewise, supporting structures could be made lighter and cheaper. Finally, faster "lay up" of the products on the job would cut labor costs for builders. Together, these corollary savings *alone* could greatly change the marketing picture, bring into much wider usage clay-structural products such as backup brick, hollow building tile for walls and floors, roofing tile, ceramic panels for curtain wall construction and partitions.

Such was our thinking at ALLIED when we first heard about the *Burns Process* for making lightweight building materials. While sympathetic, even eager, we naturally approached it with due caution.

A Proven Commercial Product

We have now seen enough of the process and construction using the resulting products to accept it as completely practical for commercial production. The blocks, when made from a proper combination of materials, are excellent in quality. Moreover, they are comparable in cost with competitive load-bearing, fire-resistant building materials.



The *Burns Block* offers the following advantages:

1. Lightweight—averaging 29 lbs. for the two-hole and 30 lbs. for the three-hole 8" x 16" block.

2. Economical to lay. Contractors say they save up to 10 cents per square foot of wall compared to laying heavy-weight blocks.

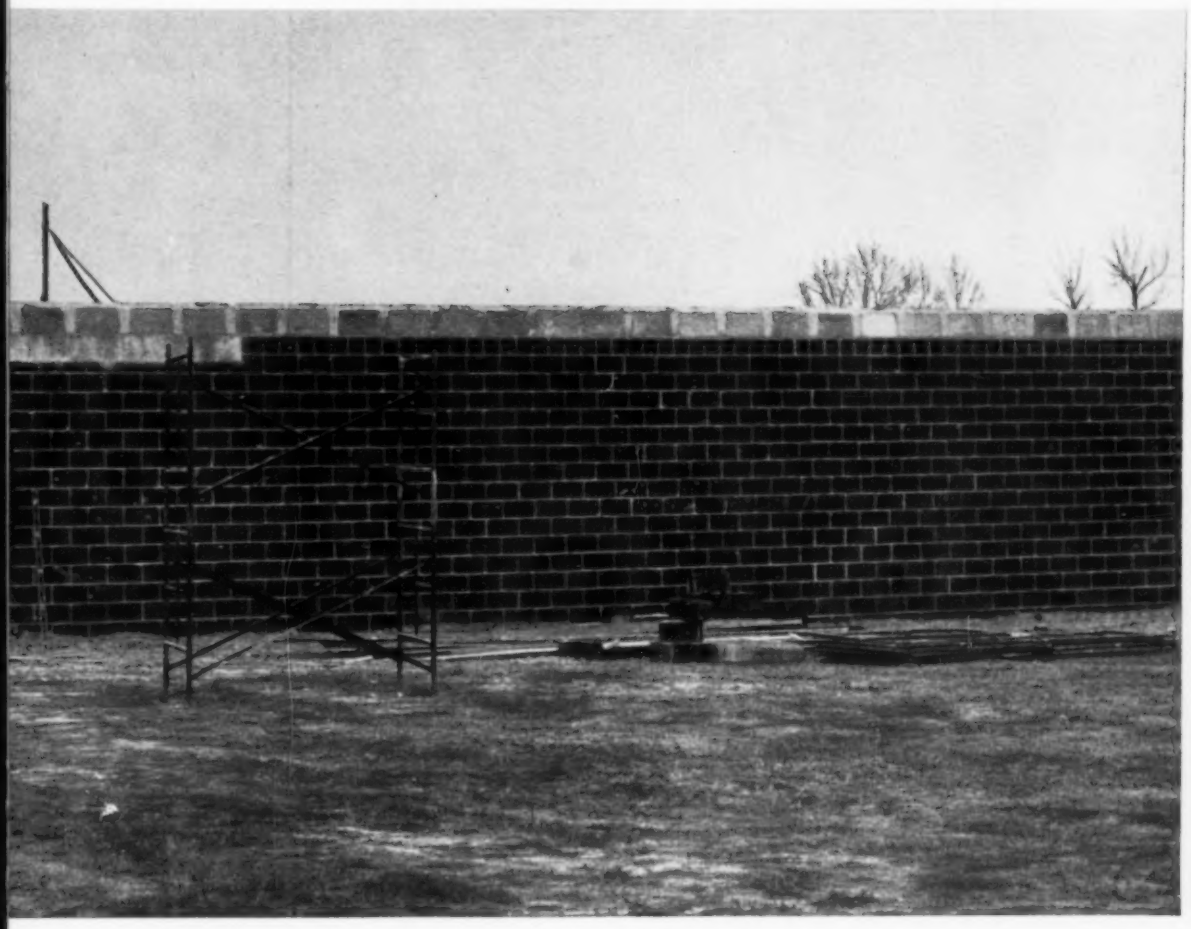
3. Natural beauty of vitrified clay products.

4. Highly fire resistant—being fired at temperatures in excess of 2100° F.

5. Excellent acceptance by architects and builders . . . and masons laying them are most enthusiastic.

6. Nailable. Case-hardened nails can be driven into the block when utilizing furring strips or other

Please say "I saw it in B&CR"



methods of attaching finished walls to the basic structure.

7. Takes paint readily and retains it. Blocks contain no lime or other alkalies. No efflorescence occurs under the paint or glaze.

8. High-compressive strength. Average load-bearing strength of the block is 1150 p.s.i. Minimum value reported is 965 p.s.i.

9. Low moisture absorption. The 24-hour cold water test on dry weight basis averages 10.6%; the 5-hour boiling-water test 15.8% average. The C/B ratio for face brick tested was 0.78; for the Burns Block 0.67.

10. Wet-dry dimensional stability. Tests of linear drying shrinkage from saturated block to dried block show:

Burns Block	0.0020%
Face Brick	0.0035%
Competitive-type Unfired Block	0.0288%

(Note that this last figure is *fourteen* times greater than the size variation experienced with Burns Block.)

11. Competitive. With all the above advantages, the Burns Block should capture a large share of the market now enjoyed by manufacturers of *unfired* competitive block. This ran *2.2 billion* (8″ x 8″ x 16″) units in 1956, with a value of almost one-half billion dollars.

A New ALLIED Service

To help our friends and customers in the industry to properly evaluate the process, and possibly get into the business quickly, ALLIED Engineering has set up a special and comprehensive service. Here's what it involves:

Your raw materials and mix formulas will be carefully checked on a "lab" basis. If they prove adaptable to the process, a quantity will be put through the plant on a full commercial scale in actual production. For these services a nominal charge will be made.

With production-proved samples at hand, the manufacturer can subject them to standard tests, also "feel out" his customers to determine the place such products would have in his particular market.

Once the quality of the product and commercial feasibility of the project has been determined, ALLIED will engineer and construct for the manufacturer a suitable facility to produce high-quality products at minimum costs, and with a minimum investment.

The Burns Block brings us all a great opportunity. Can we help you to be one of the first in the industry to cash in on it?

Write, wire or phone ALLIED Engineering Division, Ferro Corporation, 4150 East 55th Street, Cleveland 5, Ohio, or talk to your ALLIED Sales-service representative!

ALLIANCE CLAY PRODUCT CO. reports:

Fuel costs reduced up to 23% in kilns lined with B&W Insulating Firebrick

A metered fuel consumption study of six kilns lined with lightweight B&W K-20 Insulating Firebrick was conducted by the Alliance, Ohio, plant of The Alliance Clay Product Company.

Here are the results:

- *Fuel costs were reduced by up to 23% in circular kilns and up to 18% in rectangular kilns.*
- *Cycle time was shortened in both types of kilns.*
- *Salable ware was appreciably increased.*

As a result of this profitable performance, Alliance lined 23 rectangular kiln crowns and 2 circular kilns with B&W IFB.

Here's why *lightweight* B&W Insulating Firebrick slash fuel costs. They store and conduct less heat. Low heat storage permits quicker heating and cooling of the kiln, with less usable heat lost to the atmosphere. They also help step up production and cut cycle time, because they come up to operating temperature faster. Thus, the low heat storage and thermal conductivity of B&W IFB reduce fuel input—and cut your fuel costs.

Bulletin R-43 gives helpful data on the use of B&W Insulating Firebrick in periodic kilns.

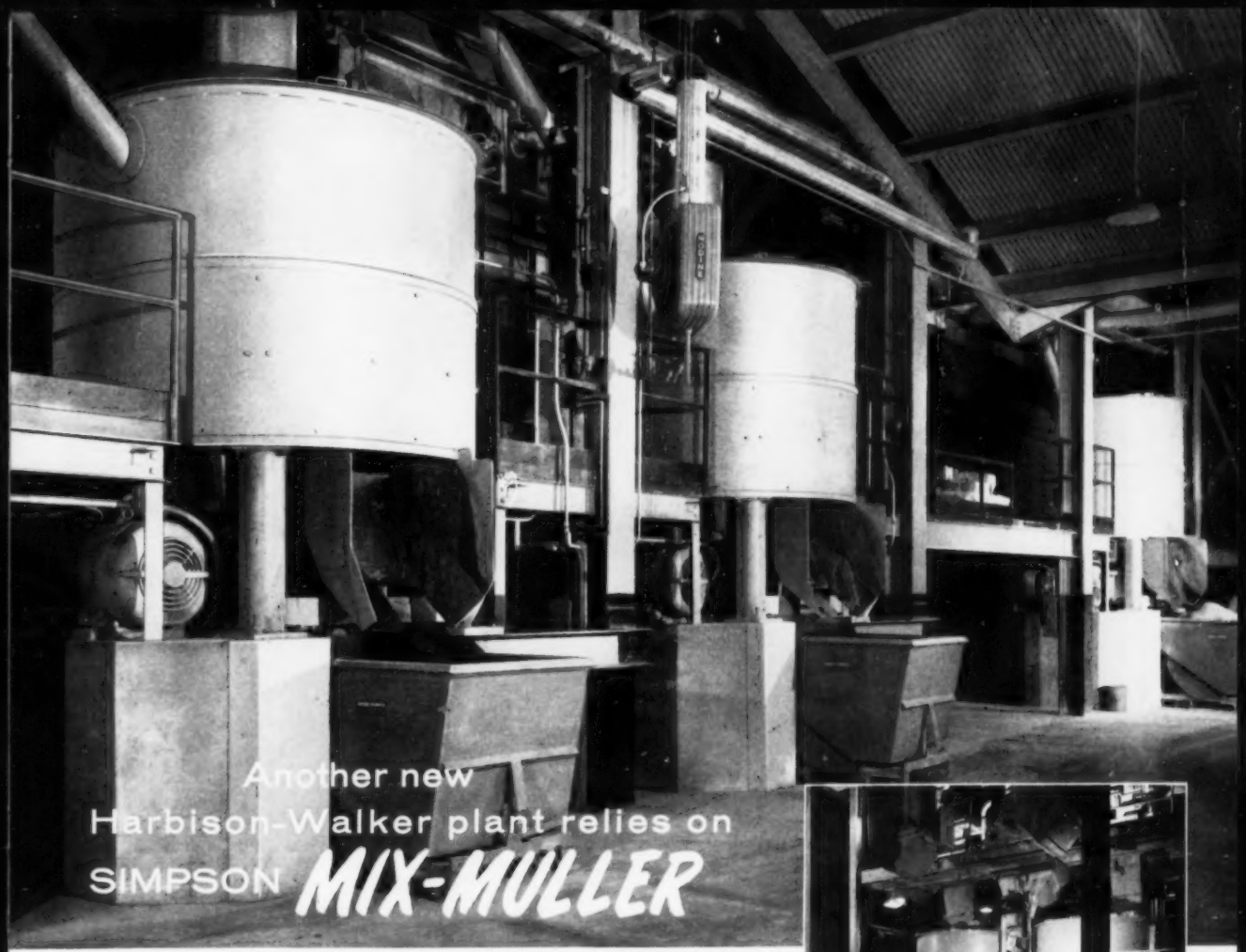
Send for your copy today.

BABCOCK & WILCOX

THE BABCOCK & WILCOX CO.
REFRACTORIES DIVISION
GENERAL OFFICES: 161 EAST 42nd ST. NEW YORK 17 N.Y.
WORKS: AUGUSTA, GA.

B&W REFRACTORIES PRODUCTS:
B&W Allmul Firebrick • B&W 80 Firebrick • B&W Junior Firebrick • B&W Insulating Firebrick • B&W Refractory Castables, Plastics and Mortars • B&W Silicon Carbide • B&W Ramming Mixes • B&W Kaowool

R619



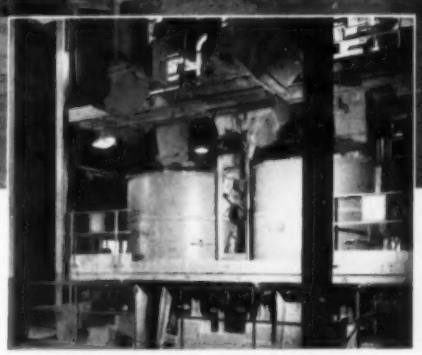
Another new Harbison-Walker plant relies on SIMPSON MIX-MULLER

Accurate batch control and positive moisture dispersion vital at new Hammond "basic" plant

Control is the keynote at Harbison-Walker's new basic refractories plant recently completed at Hammond, Indiana. *Seven stories* of the most up-to-date screening, batching and proportioning equipment help deliver precisely controlled, accurately proportioned materials to the mixing floor. Here, three 2½F Simpson Mix-Mullers provide intensive *controlled dispersion* of moisture, binders and basic materials, to predetermined properties—for delivery to a battery of power presses.

At Hammond, as at many modern Harbison-Walker plants—and in the refractory operations of leading producers *all over* the country, Mix-Mullers are relied upon for the positive moisture control, intensive blending and controlled dispersion that is so necessary to the scientific production of dense, precision sized, precision *performing* refractory products.

Yes, wherever quality and control really count—in the preparation of refractories or *any* clay or ceramic product . . . you'll find Simpson Mix-Muller in the key slot.



Above: Two of six No. 3 Mix-Mullers used to prepare all silica refractory material at Harbison-Walker's *Windham, Ohio* plant. In all, Harbison-Walker uses more than twenty Simpson Mix-Mullers.

Below: View from mixer platform showing 2½F Mix-Mullers at Harbison-Walker's Hammond, Indiana plant. Weigh larry in background is charged from overhead bins. Is used to receive components for precisely proportioned 4000-lb. batch

WRITE FOR BULLETIN showing how Mix-Muller is used throughout the refractory, brick, ceramic and heavy clay products industry.

SIMPSON MIX-MULLER DIVISION
National Engineering Company
654 Machinery Hall • Chicago 6, Illinois

C-158

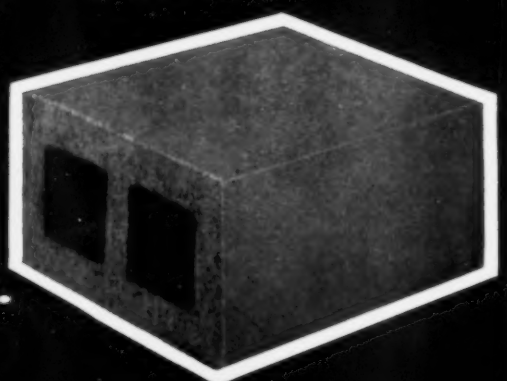
PACO

CAR TOPS

cut replacement cost by as much as 50%!

It's a fact . . . nine out of ten users of PACO CAR TOPS are satisfied customers—and all report replacement savings up to 50%! For the utmost in service, you require a good first quality car top, highly resistant to spalling, and a good hot load test . . . and you get just that when you standardize on PACO.

You and your plant can enjoy these increased savings simply by placing a trial order. There is a PACO engineer as close as your telephone . . . or write us direct for complete information.



Manufactured by

NORTH STATE PYROPHYLLITE CO., INC.

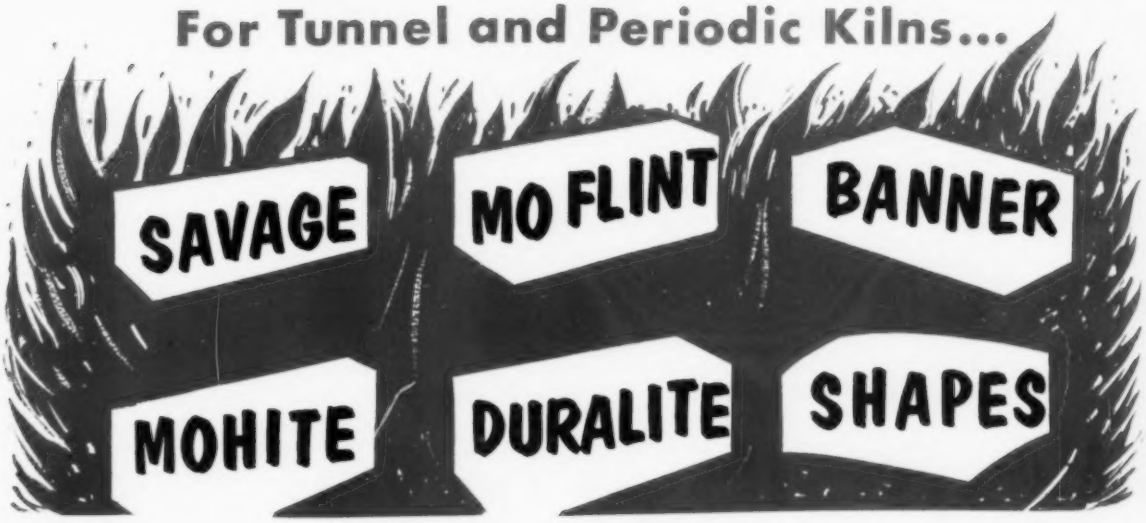
GREENSBORO, NORTH CAROLINA

Telephone BR 4-7055

OTHER PACO PRODUCTS INCLUDE: • PACO PLASTIC • PACOCAST • PACO H.T. CEMENTS • PACO FIRE BRICK MORTAR • PACO SIDE CAR BRICK • PACO FIRE BRICK • PACO LADLE LINING • PACO HEATZONE COMPOUND

FIREBRICK
THAT CAN TAKE IT!

For Tunnel and Periodic Kilns...

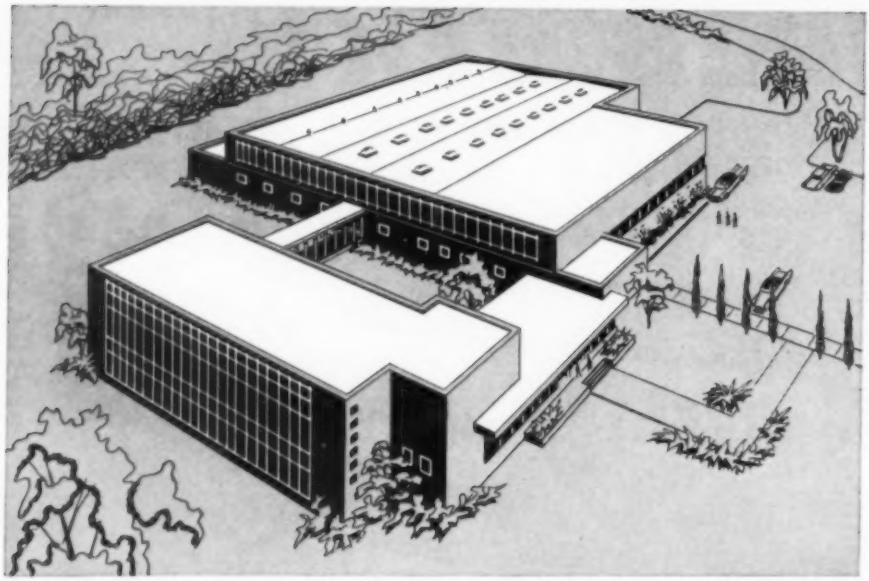


Periodic and tunnel kilns need five different quality and composition fire-brick for top performance and long service. From intermediate through High Alumina Quality, WELLSVILLE FIRE BRICK COMPANY can supply refractories to your most exacting specifications. Add to this, WELLSVILLE'S many years of experience in supplying quality refractories. Whether it's a new kiln or repairs, you can count on WELLSVILLE for top quality and top service. We'll be glad to assist you with recommendations on brick, shapes, castables, plastics and cements.

Write

WELLSVILLE *Fire Brick* COMPANY

WELLSVILLE MANUFACTURERS MISSOURI



The GARBER RESEARCH CENTER, recently completed at Pittsburgh, doubles Harbison-Walker's research facilities

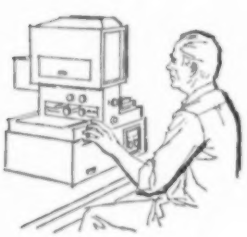
HARBISON-WALKER

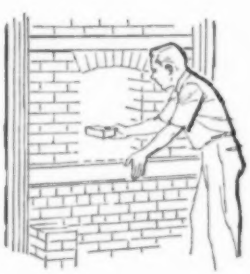
Leadership in refractories through constant research

For more than half a century, through vigorous and aggressive research, Harbison-Walker has contributed in a large measure to industrial progress. Recently completed is the Garber Research Center. These laboratories provide the most modern and most complete facilities for the development of new and better refractories for industry. Literally scores of diversified Harbison-Walker refractories are produced specifically for the many new industrial demands.

This research expansion is just another forward step by Harbison-Walker. Manufacturing facilities have recently been greatly enlarged through building new plants and modernization of existing plants. A highly-perfected quality control program assures the uniformly high quality of all Harbison-Walker products.

Continual development of extensive reserves of raw materials insures uniformity of quality far into the future. Engineering leadership contributes to industrial progress through correct application of refractories. By these accomplishments Harbison-Walker keeps pace with industry's most exacting needs.





HARBISON-WALKER REFRACTORIES CO.
AND SUBSIDIARIES
World's Most Complete Refractories Service
GENERAL OFFICES: PITTSBURGH 22, PENNSYLVANIA

Mailing this coupon today

can help you

Cut Hot Load Sag

spalling loss...slagging...with

new DRAGON brand high quality semi-silica brick

... made in standard series and special shapes

Specify and use for heat-treating and forge furnaces; heating and reheat furnace side walls and roofs; open-hearth checkers, side walls and arches; blast-furnace checkers, domes, combustion chambers and skin walls; soaking pit covers, roofs and side walls; tunnel kiln and periodic kiln linings; and rotary kiln driers and coolers. Possesses high hot-load strength, excellent workability at upper temperature limits with out deformation. Try it yourself! Mail the coupon above!

DF8-3

Another new development from...

Denver Fire Clay Company

DENVER • SALT LAKE CITY • EL PASO

YES... I am interested in learning more about new DRAGON brand semi-silica brick. Send complete information to...

NAME _____

TITLE _____

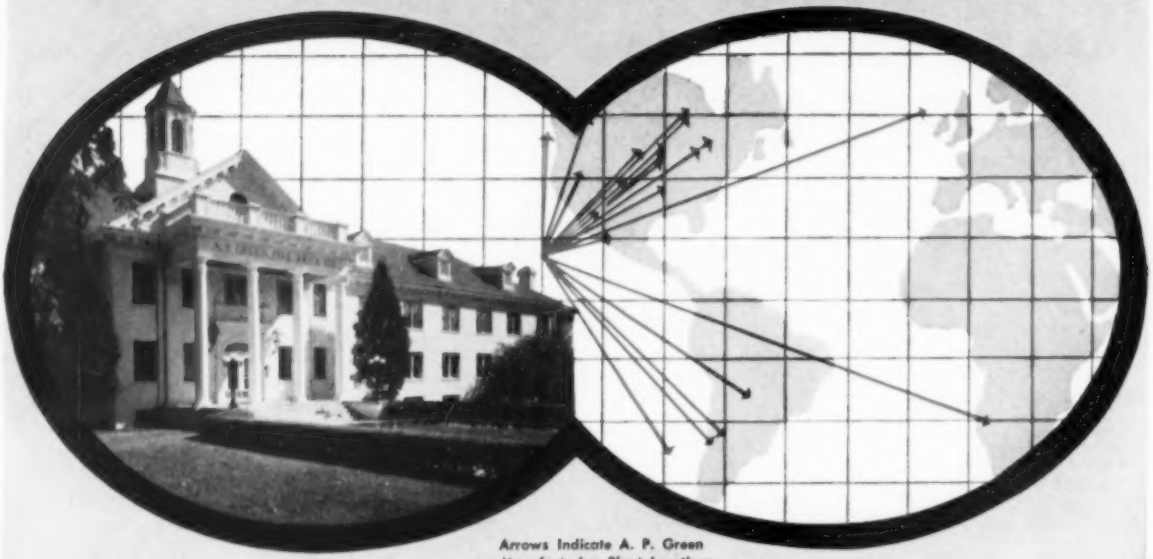
FIRM _____

ADDRESS _____

Mail this coupon today to DENVER FIRE CLAY COMPANY 3655 Blake Street, Denver 17, Colorado

A. P. GREEN

strategically located plants
modern research facilities
rigid quality control methods . . .



Arrows Indicate A. P. Green Manufacturing Plant Locations Throughout the World

give you one dependable source for refractory products

anywhere in the world

Plants:
Mexico, Mo.
Woodbridge, N. J.
Sulphur Springs, Texas
Philadelphia, Pa.
Troy, Idaho
Jackson, Ohio
Oak Hill, Ohio
South Webster, Ohio
Pueblo, Colo.
Macon, Ga.
Moose Jaw, Sask., Canada
Toronto, Ont., Canada
Acton, Ont., Canada
Buenos Aires, Argentina
Sao Paulo, Brazil
Lota and Santiago, Chile
Manchester, England
Mexico City, D. F.
Monterrey, Mexico
Montevideo, Uruguay
Johannesburg, South Africa

A. P. Green REFRACTORY PRODUCTS

A. P. GREEN FIRE BRICK COMPANY
MEXICO, MO., U. S. A.
In Canada: A. P. Green Fire Brick Co., Ltd., Toronto 15, Ontario

"PYRAX" PYROPHYLLITE

FOR REFRACTORIES

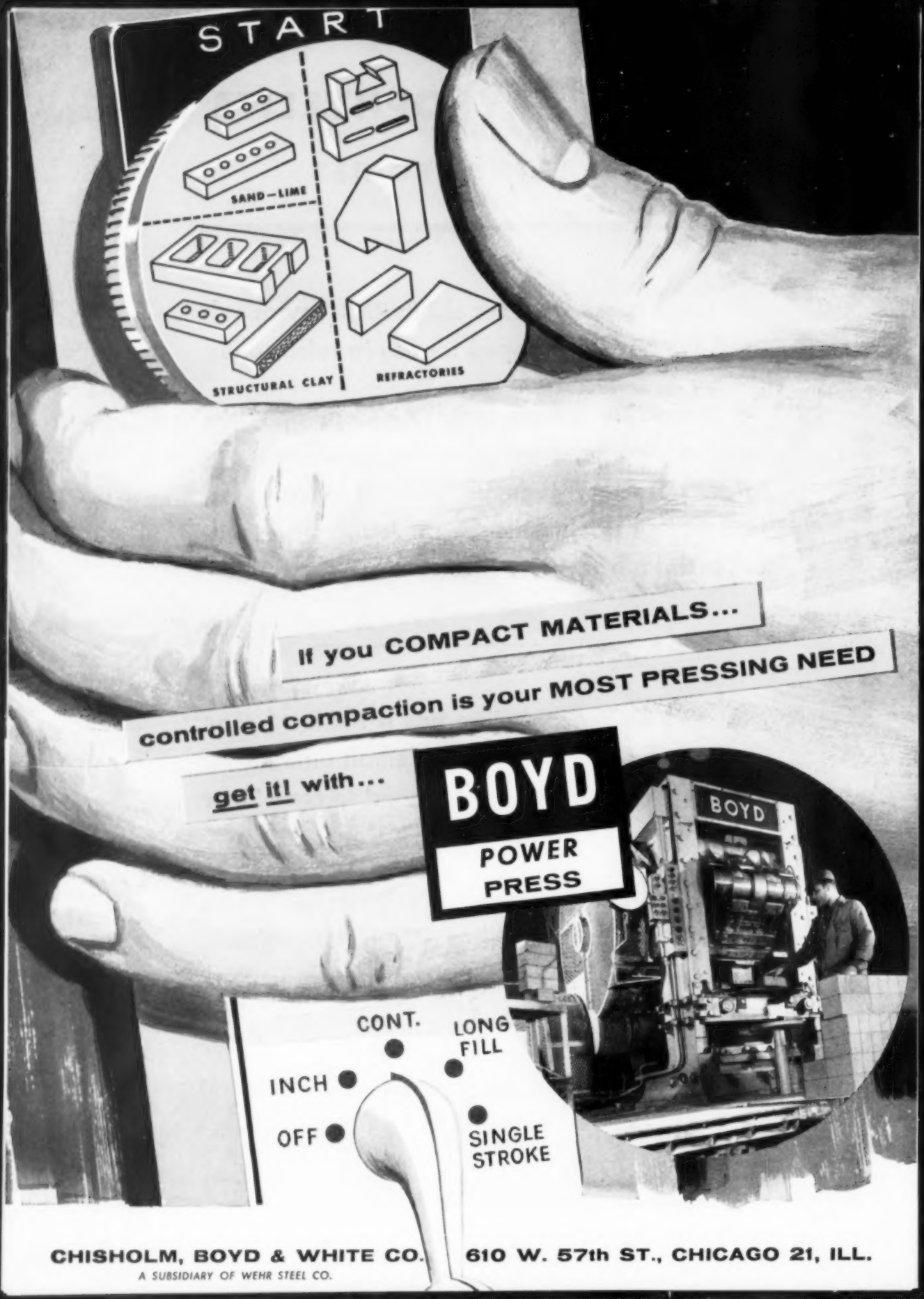
Three special grades of "PYRAX" pyrophyllite have been developed for use in refractories.

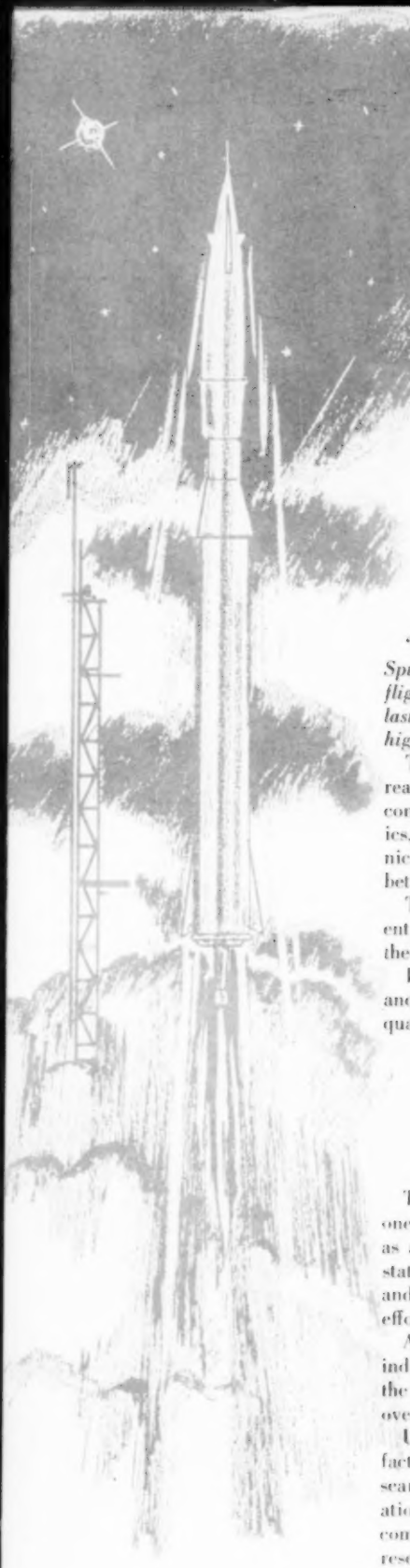
Refractory grades of "PYRAX" pyrophyllite can be used to good advantage in refractory brick, refractory cements, unfired refractories, backwalls, radiants, tile setters, saggers, and other special refractories.

"PYRAX" pyrophyllite has a P.C.E. of cone 26 to 27 and when mixed with small amounts of kyanite its P.C.E. can be increased to cone 28 or 29.

"PYRAX" pyrophyllite refractories when properly compounded have a high strength, will not spall or fail due to temperature gradient.

R. T. VANDERBILT CO., INC.
230 Park Avenue, New York 17, N.Y.


START
SAND—LIME
STRUCTURAL CLAY
REFRACTORIES
If you COMPACT MATERIALS...
controlled compaction is your MOST PRESSING NEED
get it! with...
BOYD
POWER
PRESS
BOYD
CONT.
LONG FILL
INCH
OFF
SINGLE STROKE
CHISHOLM, BOYD & WHITE CO.
A SUBSIDIARY OF WEHR STEEL CO.
610 W. 57th ST., CHICAGO 21, ILL.



Research, Quality Control Lead

Refractories In The Rocket Age

"In mid-Summer 1956, for instance, satellites were still but plans; there were no Sputniks, Explorers, no Vanguards. There were no transcontinental commercial jet flights. No long range missiles . . . no operating major nuclear power stations. In the last two years, there have probably been more developments in fields depending on high temperatures (ceramics) than in all previous history."

This quote, from a Stanford Institute Research bulletin, sums up very well our reasons for focusing this annual Refractories special section on research and quality control. Any product requiring heat in the manufacturing process—including ceramics, metals and power—requires refractories. To meet the increasingly high technical standards of nuclear power, rockets and missiles, refractories must not only be better but new forms must be developed.

The refractories industry has been building new research facilities, expanding present facilities, entering new research fields, putting higher standards of quality on their product, and developing products unheard of a few years ago.

In this issue, on the next pages, we try to reflect this activity by showing in print and picture what a selected group of refractory companies are doing in research and quality control. What these companies are doing is representative of the entire industry.

Foundation of Refractory Progress Lies In Research Programs: ACS Pres. Bradley

The statement has been made many times in recent years, and quite accurately, that one of the underlying foundations of the U. S. economy is technology. That industry as a whole is convinced of the truth of this statement is evidenced by the available statistics relative to the annual expenditures being made in this country for research and development. From these figures, it may be seen that the total outlays for this effort have more than tripled between 1945 and 1955. This same trend is continuing.

As the above statement applies to our total industry, so it applies to the refractory industry. Here again the evidence that refractory industry subscribes to the truth of the statement lies in the fact that its research and development efforts have expanded over the years at an ever increasing rate.

Until recent years there were only a few of the companies engaged in the manufacture of refractories that considered it advisable to have a formally organized research and development department as a part of their corporate function. This situation has changed over the years, however, until at the present time a refractories company, regardless of size, not having some part of its organization devoted to the research function is rarity. In fact, many of the companies have elevated their research and development department to a major standing within the company, with

(Continued on next page)

Technology Key To Industry Progress: Bradley

(Continued from page 65)

top management representation within the corporate structure. It is evident that this trend will be further extended within individual companies and throughout the industry in the future.

Aside from assigning to research and development a position of prestige within the company, further tangible evidence of the importance placed upon research by the refractories companies is the fact that many of them have greatly expanded their research facilities. These expanded facilities have included in several instances the building of completely new and well-equipped research laboratories.

More evidence of the importance placed upon refractories research is the effort being expended in this direction by some of the consuming industries—notably steel, glass, and aluminum. Some of the companies represented in these major industries have set up quite elaborate research and development facilities devoted primarily to determining the best refractories for their particular use. It has been natural that to carry out this primary function, the efforts of these research facilities have extended into the area of determining the fundamental properties of refractory materials and the development of new and improved materials for the services existent in these industries. The contribution of this phase of research to the refractories industry cannot be minimized.

R. S. Bradley

President
American Ceramic Society

When one inquires as to the reason for the vast expansion of the research and development effort in the refractories industry, the primary cause can probably be represented by a single word—*competition*. Research as a part of the total corporate effort must be guided toward the same goal as all other functions of the company, namely, to place the sponsoring company in the best possible competitive situation in the market place. In achieving this goal there are some very desirable side benefits—the end result of which helps to enhance the well-being and the standard of living of people.

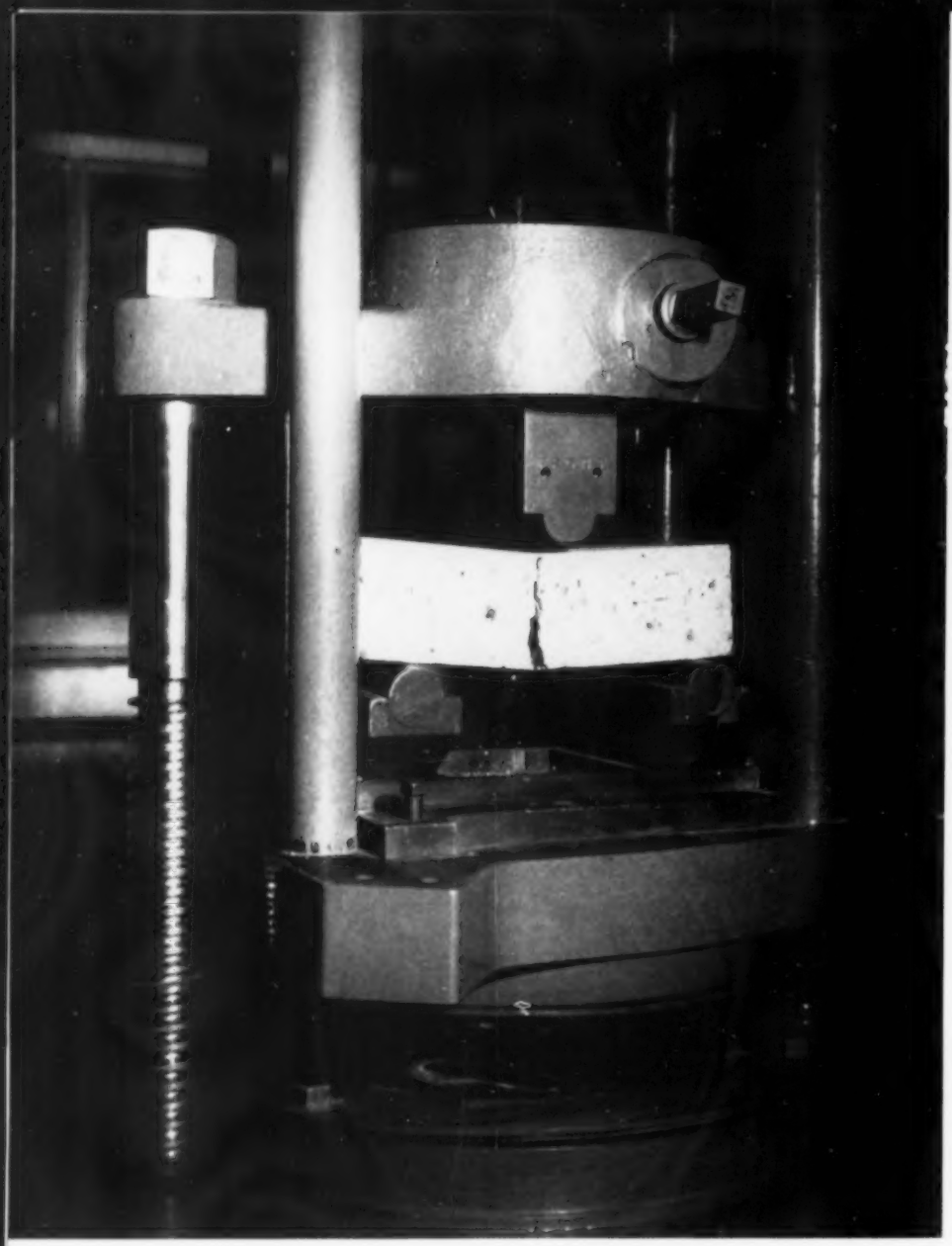
In addition to both manufacturers and consumers of refractories, there are new segments of the total economy which are contributing greatly to the total refractory research effort. A few years ago these areas were unknown. The need for refractory materials in such areas as missiles, rockets, nuclear energy, etc., has set off a vast research program into the materials field in general. Because of some of the unique properties of refractories and ceramic materials, they have come in for a relatively large proportion of the research effort aimed in this direction. There is no doubt that the results of this research will be far reaching not only in the materials field in these special areas, but will also provide a basis for a better understanding of refractory materials in the more prosaic areas in which we are primarily engaged.

It is very gratifying to see research and development in the refractories industry begin to become of age. A great deal of distance along the road toward better understanding of refractory materials has been traveled, but much more remains. There is no doubt that it is the obligation of everyone in the refractories industry to support this continuing effort toward a better understanding of refractory materials and the development of new and better products to meet the demanding conditions placed upon them.

Research in Refractories

Fast-moving developments in jets, missiles, rockets and nuclear power bring increasing need for research, quality control, in development of higher product quality.

At right is ceramic solution being sprayed on steel mandrel to form radome at Gladding, McBean

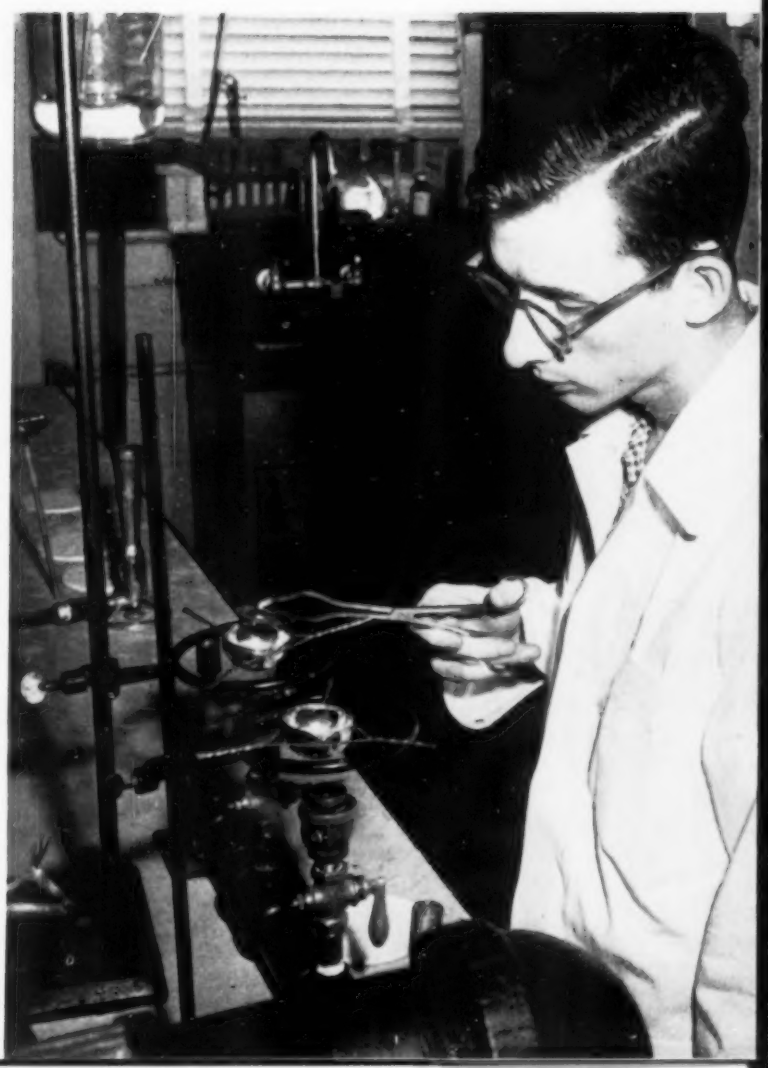


Samples of product are tested in many ways, including this test to determine physical strength of product.

A typical lab scene is this one of the North American Refractories facilities.

Research efforts have also helped industry to develop improved, automatic machinery to speed production, cut product costs. Steel-clad brick being made here depended heavily on research in the product development stage.

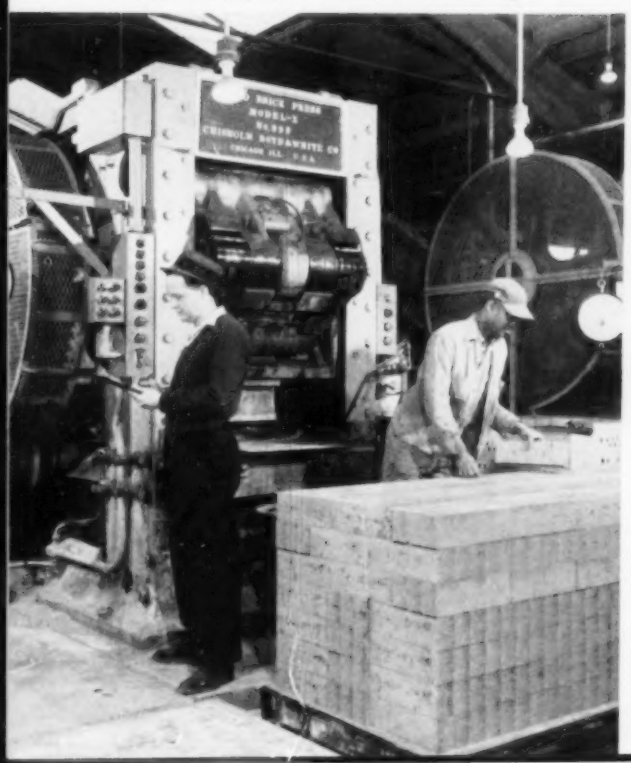
Dry pan and multi-decked screen in A. P. Green pilot plant unit.

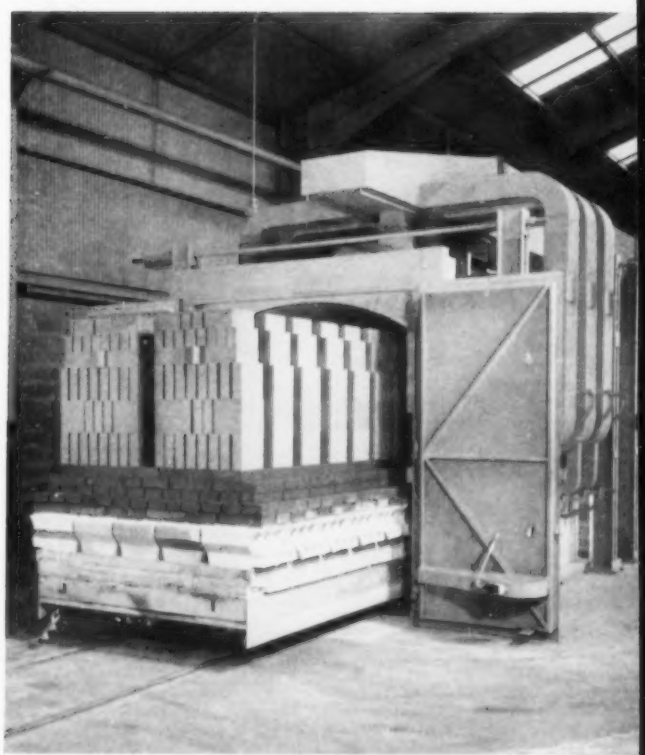


Highly trained lab personnel run full scale chemical tests in addition to physical property and heat testing.

A plant's quality control begins right in pit with initial blending and crushing . . .

Control checks are made through production line at pressing (below) and during firing time of product (right) to final product testing.





Research

Quality Control

Here's How The Industry Is Expanding, Improving, Building New Facilities

An overall picture of the large-scale modernization and expansion is presented, using several representative companies as living illustrations

BABCOCK & WILCOX CO. works to improve materials for furnace construction in this modern laboratory at Augusta, Ga. Devoted solely to development and research in refractories, the aim is to develop more efficient, lower cost furnace operations.

NARCO's new Curwensville laboratory

North American Refractories

A new 12,000 square foot Research Center was put into operation during 1958 by North American Refractories Co. Located at Curwensville, Pa., the center is expected to meet the demands of an intensified research and product development program. According to F. W. Schroeder, Director of Research, the larger facilities will shorten the time required for the rapidly changing demands of customers to be translated into new products. The research staff was increased to take advantage of the modern facilities where mining and engineering are also coordinated with research to insure planned control of materials.

One of the most complete laboratories available to the industry for wet chemical analysis is housed in the new building. Routine investigations are made of raw material and finished product. Detailed crystallographic studies can be made to determine the influence of raw material and processes on any product's crystal structure and, in addition, this section is equipped so that critical examination of refractory products that have seen service can be made.

Physical testing devices are available to the operators of the center so that the measurable properties of any material or product can be speedily and accurately measured.

Laboratory-type production equipment is used to closely simulated plant processes under conditions of accurate control. While the center is equipped with a variety of kilns, equipped for automatic program control and oxygen enrichment for the production of high and rapid temperatures, the location adjacent to the Curwensville plant allows firing to be conducted in production kilns if that is desirable.

Schroeder feels that "Progress in refractory technology is being made at a rapidly accelerating rate and intensive programs of research and development are essential if a company is to maintain its position in the industry. This applies not only to the development of new types of refractories but also to new application of the conventional types of the present. Research departments of various consumers have made important contributions to refractory technology in the recent past. This emphasizes the desirability of close collaboration between producers and consumers."

"Progress is usually the result of compromise between the producers desires and the producers capabilities. It is our feeling that cooperation between consumer and producer is the principal reason for improvement in refractory quality and service life over the past 10 to 15 years and it is our desire to foster and encourage this cooperation in every way possible."

Kaiser Chemicals Division

The Kaiser Chemicals Division of Kaiser Aluminum & Chemical Corporation operates an integrated laboratory devoted entirely to research and development in the basic refractories field at Milpitas, near San Jose, California.

This research facility actually predates the entry of Kaiser into the refractories business during World War II and was, in fact, the site of its first facility for producing refractories.

Today the laboratory is modern in every respect utilizing the most up-to-date equipment for analyzing and developing basic refractory products. Recently these facilities have been expanded to include a section on magnesia research, a group which was formerly located at Kaiser Chemicals' Moss Landing Magnesia plant.

"Refractories research involves the job of keeping abreast of the newest and latest technical developments in the industries we serve and developing or modifying refractories which will do the job better and for less cost," says Research Director James C. Hicks.

"For example, one of our major tasks has been to develop suitable refractories for use in the basic oxygen steel process. While this work is not complete, we have made significant strides in developing refractories which we feel will serve this new process well," Hicks says.

Multi-point recording dilatometer was developed by Kaiser to measure, record specimen expansion.

The laboratory is organized into several sections, each group devoted to the study and development of refractories for a specific consumer group. Sections cover refractories for use in the steel, glass, cement and copper industries. In addition, there is a section which concentrates its efforts on fundamental research, the process of gaining increased knowledge which can result in improved refractory performance.

Among the first accomplishments of the laboratory was the development of a Periclase which would be made in a rotary kiln with a magnesia content in excess of 95% MgO. This marked the first time in the industry that a Periclase of this purity was made economically available in tonnage quantities. Around this grain a complete series of basic refractory brick, ramming mixes and mortars was developed. The group has also developed a number of patented bonds which have set new standards of performance for each of the Kaiser products.

In addition to the development of new or improved products, the research group maintains close liaison with the Sales Department so that laboratory personnel are kept abreast of developments in the field. Performance studies are conducted both in the laboratory and in the field which lead to additional information on product application or product improvement. In this way, the research group remains abreast of developments needed to insure satisfactory products for an existing or future market.

The facilities themselves include laboratory equipment for fundamental studies and for physical and chemical testing. Pilot facilities can be used to make specialized synthetic refractory grains. This provides an opportunity to study completely the steps in the manufacture of a refractory from the one-pound pellet stage through preliminary pilot scale production.

"I suppose we will never be able to say to our satisfaction that a project is complete," says Hicks. "Even when we develop a refractory which we think is superior in every respect, changes in the process in which they are employed, require further changes or improvements. At the same time, the refractories industry is constantly uncovering new knowledge which makes possible further improvements. This poses a constant challenge to any refractory company that wants to remain competitive and the result is better products. These better products themselves make possible new technological improvements by our customers and the cycle starts all over again. It's a never-ending but highly fascinating job."

Small sections of wall constructions are tested for expansion under load at high temperatures

A. P. Green Fire Brick

The A. P. Green Fire Brick Company was one of the first companies in the refractory industry to recognize the importance and value of an organized research program. It has maintained one of the largest and most completely equipped laboratories in the industry since the middle '20s.

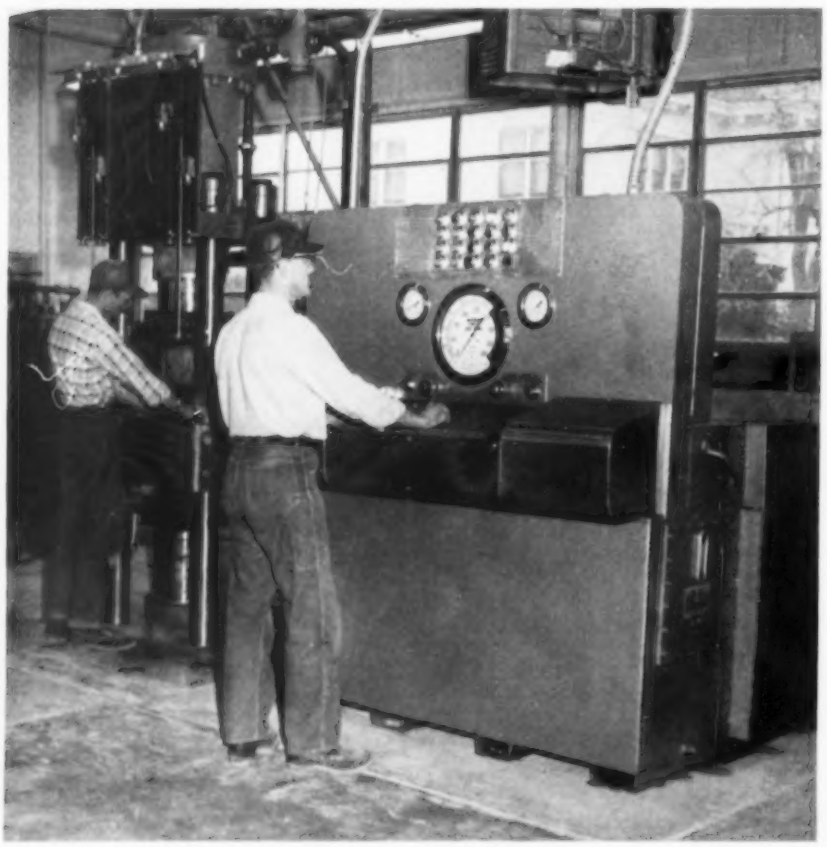
Prior to 1955 the main development emphasis was concentrated on products in the fire-clay and high alumina brick and specialty refractories field. Since that time, the Company has diversified its products and sales interest. This necessitated a greatly expanded research program incorporating research in the broadest scope of refractory products which are demanded by industry in every phase of refractory materials. This included work in basic, silica, sintered alumina, mullite, zircon, and silicon carbide. It also included contract work on ceramic fuels for the Atomic Energy Commission.

The company is embarked on a five-year research expansion program which is being completed in stages as needed and as additional technical personnel can be properly trained. When the program is completed in 1960, the staff research personnel will be doubled, and a new $750,000 research center will be in use. The present research facilities will continue to be used for clay testing and product control.

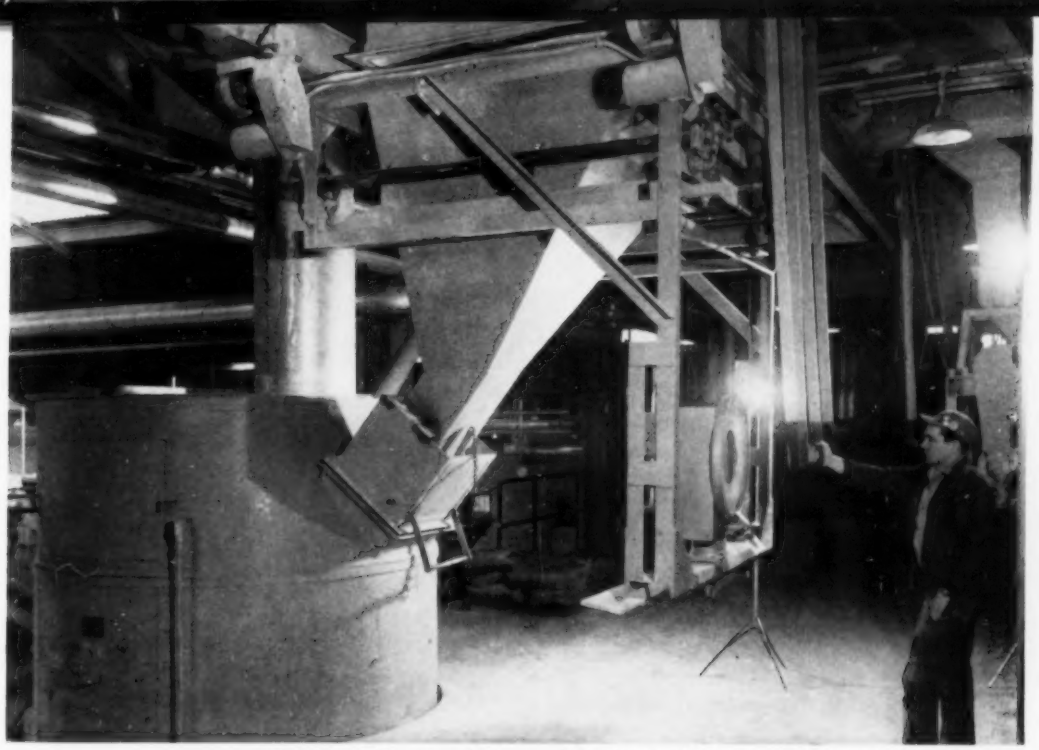
The new research facilities are designed so that they can be expanded to take care of future research needs. The initial plans include three units.

(1) 6,000 square feet on one floor of process and pilot plant facilities.
(2) 6,000 square feet on one floor of furnace testing facilities.
(3) 12,000 square feet on two floors of offices, library, conference room, and laboratories including x-ray, microscopic, chemical, electronic, and physical.

Units One and Two of the new research center are completed and in use. The third unit, scheduled to be built in 1959, will be the front of the completed "U" shaped building with Units One and Two serving as the rear wings. The front building will be of Williamsburg Colonial design to match the Company's main office, which is adjacent and to the north of the new research center.



Automatic cycle hydraulic press in Green Research Center Pilot Plant



Batching of materials is carefully checked to control materials, particle sizes.

Harbison-Walker Refractories

Harbison-Walker's research staff is just completing its move into the new Research Center, which cost more than $1,500,000, named for the Company's President, Earl A. Garber. The new facilities which are said to be one of the refractories industry's finest research laboratories, are located twelve miles south-east of downtown Pittsburgh, Pa., near Pleasant Hills. The twenty-one acre site chosen for development is a partially wooded hilltop whose natural landscaping has been retained. The Research Center is divided into several distinct units. The accompanying photograph shows the building for instrumental research methods at the left, and the pilot plant at the right. The total floor space is about 45,000 sq. ft.

Donald F. Stock will be Manager of the Garber Research Center, and Donald F. King, Assistant Manager. Edwin Ruh, Assistant Director of Research, will have supervision of instrumental research.

The Company has for many years conducted its research at the Hays Laboratory, Hays, Penna., which now will be entirely devoted to Quality Control under the supervision of David C. Skelly and William D. Fitzpatrick.

Raymond E. Birch, Director of Research, reports that research men have been added to their staff over the last year in anticipation of the move to the larger facilities, and that further growth is planned.

Both fundamental and applied research programs will be carried out at the new facilities. The latter includes development of raw products now in the pilot plant stage for which Harbison-Walker forsees the need for construction of new plants within the near future.

A more complete unveiling of the Company's research plans is expected at the open house and dedication ceremonies for the Garber Research Center scheduled for the first week of June, 1959.

New Garber research lab of Harbison-Walker

Gladding, McBean & Co.

Over forty people are employed in the research division of Gladding McBean & Co. The department reflects the wide area of interest of the Company in all of the Ceramic fields with personnel available for refractory research with specialties in mineralogy, geology, physics and analytical, inorganic, organic and physical chemistry. This group is reinforced by people who have experience in process engineering, product application, statistical analysis, technical management and writing.

The laboratory houses a variety of crushing, grinding, pulverizing, sizing and handling equipment. Also available for research in the body preparation and formulation are facilities providing for the formulation and grinding of ceramic compositions suitable for micro-chemistry research through semi-production development work.

For research in the forming of ceramic bodies, there is a series of press equipment with up to 150-ton capacity for laboratory-through-semi-production forming. In addition, there are full casting and jiggering facilties and hydrostatic pressure vessels capable of producing pressures at 35,000 lbs. per square inch.

The laboratory also provides for the testing of all laboratory specimens, mechanically and electronically. Advanced electronic equipment and sonic units have been installed for this purpose. Facilities are also available for complete environmental testing. In addition to the laboratory's testing facilities, there is a pilot plant with production scale equipment for testing products on a production basis.

Gladding, McBean also maintains a research laboratory at the Pittsburgh, California plant which is staffed with ten men who devote all of their effort to product development and product improvement. Work at this location includes the testing of products through the A.S.T.M. procedures in the special equipment that is used for these tests.

An outstanding example of the results of research is a new clay benefication plant at Ione, California. This plant is the culmination of work done at the Pittsburgh lab-

oratory and in cooperation with Owens-Illinois Glass Co. the sandy clay at this location is separated into high grade fire clay and super duty fire clay and high grade glass sand.

In commenting on the need for refractory research, W. F. Gojehon, Vice President and General Manager of the Refractories Division of Gladding, McBean stated "With the many changes taking place in the refractory industry today, well-equipped and adequately-staffed research facilities are assuming a paramount importance". He pointed out that such important industries as steel and aluminum are depending upon improved refractories to increase their capacity and reduce their cost.

He emphasized the increasing need for technical products made from refractory materials for use in the rapidly growing fields of electronics, aviation, missiles and nuclear energy. Recently the Company received a $215,000 contract from the Air Material Command for the second phase in the development of a radome (nose cone for guided missiles) from high purity ceramic oxides. This contract follows an earlier one which has been brought to a successful conclusion.

Plans for a new research laboratory featuring a high degree of flexibility, which will allow it to conform to the rapidly changing needs of ceramic research, have been announced by Gladding, McBean & Co. Slated for construction in 1959 the facility will replace the present laboratories with individual laboratories for each of the areas in which the Company is interested.

When making the announcement C. W. Planje, President stated that only by extensive research programs can the ceramic industry protect its present markets and provide a practical basis for expansion into new markets.

A gradient furnace is used to study body characteristics over temperature range up to 2500° F.

H. K. Porter

St. Louis is the site of Research Facilities of the Refractories Division of H. K. Porter, Inc. Located at the Christy plant this laboratory was started in 1902 and at that time its efforts were, like much of the early work, devoted to the chemical nature of the clays with which the company worked.

When some of the early results of the program indicated that some clays then being discarded as worthless were, in fact, exceptionally high in alumina, the value of the work was demonstrated. This resulted in the integration of the department into the organization.

Research at Porter is integrated and directed toward clear cut objectives for both short and long range projects. The program includes improvement of present products, development of new products and methods, and investigation and testing of all raw materials. The fundamental facilities required for this kind of activity are grouped around the library. Chemical laboratories suitable for complete chemical analysis, tools for petrographic examination of both used and unused specimens, thermal expansion furnace and measuring equipment and offices for the staff are concentrated in this area.

Special testing equipment which includes modulus machines, porosimeter, electric furnaces, viscosimeter, and autoclave are concentrated with the pilot plant preparation equipment. These are crushers, screens, pug mill, driers, presses and blenders. Several types of kilns and furnaces are available so that the heat treatment of any specimen can be accurately controlled and selected samples can be tested in the lab under conditions that simulate actual commercial use.

While the Central Research Laboratory is competently staffed by ceramic engineers with recognized specializations under the overall supervision of W. L. Fabianic, Vice President and director of research outside specialists in X-ray diffraction, spectrography and surface area gas absorption are retained.

Overall view of Porter's St. Louis lab.

Charles Taylor Sons

The Chas. Taylor Sons Co. maintains dual facilities in Cincinnati, Ohio with a research center and Technical Center being operated adjacently on the Cincinnati plant site.

The laboratory has facilities for forming shapes by pressing, extrusion and slip casting and for running standard physical tests on refractories as well as facilities for determining permeability, modulus of rupture, reheat, glass corrosion and slag attack. Pilot plant facilities for calcining, crushing and grinding are located outside the laboratory in another section of the plant. Office space, library and petrographic facilities are located in the technical center.

Everett A. Thomas, Chief Ceramic Engineer at the Center, says the research goal is to "provide better mullite, alumina and zircon type refractories for the glass and metallurgical industries. Current research projects include the study of improved structure of refractories that will be more resistant to glass corrosion and slag, investigation of natural and synthetic mullite forming raw materials for improved mullite type brick, investigation of zircon base materials for improved resistance to glass corrosion and batch dust and investigation of mullite, alumina and zircon castables, and ramming mixes for monolithic construction."

Taylor's laboratory and Cincinnati plant facilities

General Refractories

General Refractories Co. erected their laboratory at Baltimore, Md., some 10 years ago, supplanting a previous building of about one-third the size. The present structure represents the first attempt in the industry, General feels, to erect a laboratory especially designed for the conduct of research on refractories of all classes and forms.

In the past year, the extensive facilities already existing were practically doubled by adding new floor space, equipment and technical personnel. This was achieved in part by the erection at Gary, Indiana, of an entirely new quality control laboratory about two-thirds the size of the laboratory at Baltimore permitting the use for research of certain equipment of the latter formerly devoted to quality control work.

The general plan of the laboratory includes two units; a single-story brick and concrete building of about 7500 sq. ft. constituting the front, as well as a connecting steel and glass factory type of structure of about 15,000 sq. ft. in the rear.

Front Unit. This is designed to house the basic tools of research: staff conference room, library, such analytical facilities as a wet chemical laboratory, two spectrographs, an X-ray diffraction machine and petrographic apparatus comprising microscopes, grinding, polishing and mounting machines for preparing thin and polished sections; instruments for calibrating all types of pyrometers, for determining such properties as thermal expansion and modulus of elasticity; apparatus for studying phase equilibrium; and rooms for photographic work, drafting, and the safekeeping of records.

Rear Unit. This provides the facilities for development work as well as for testing mechanical properties and behavior at high temperature. One wing of this unit contains the pilot plant equipment necessary for the basic procedures of crushing, grinding, screening, tempering, molding and drying; also machines for measuring strength and hardness; as well as rooms for sampling and storage. Another wing contains all the furnaces needed for evaluating such thermal properties as P.C.E. value, spalling resistance, volume stability, performance under compressive loads and in tension, resistance to carbon monoxide distintegration and slags.

Play Safe with

GLOBE

SUPERIOR LADLE BRICK

wire cut and dry pressed

PRODUCING ONLY ONE PRODUCT

Guarantees to our customers Safe, Efficient and Low Cost Ladle Practice
Always Dependable
Globe Superior Ladle Bricks are used everywhere for all types of Iron and Steel ladles

SERVING THE STEEL INDUSTRY SINCE 1873

THE

GLOBE

BRICK COMPANY

East Liverpool, Ohio

Choose the silicate of soda for your process from over 40 PQ products (liquid and dry) $2Na_2O:SiO_2$ to $Na_2O:3.75\ SiO_2$. These include sodium silicates, sodium metasilicate, sodium sesquisilicate, sodium orthosilicate.

Potassium silicates are also available.

Nine manufacturing plants to serve you are located in Anderson, Indiana; Baltimore, Maryland; Buffalo, New York; Chester, Pennsylvania; Jeffersonville, Indiana; Kansas City, Kansas; Rahway, New Jersey; St. Louis, Missouri; Utica, Illinois. Less than truckload lots from distributors in over 65 cities.

All this, plus the benefit of our long experience in manufacturing silicates for the ceramic and refractories cement industries.

Ask for our free bulletins:

"PQ Soluble Silicates in Cements"
"PQ Soluble Silicates, Properties, Applications"

PHILADELPHIA QUARTZ CO.
1148 Public Ledger Bldg., Philadelphia 6, Pa.

PQ SOLUBLE SILICATES

Associates: *Philadelphia Quartz Co. of Calif., Berkeley & Los Angeles, Calif.; Tacoma, Wash.; National Silicates Limited, Toronto, Canada.*

Trademarks Reg. U.S. Pat. Off.

KIREX

"Registered"
Kittanning, Pa.

- LADLE BRICK
  Power Pressed and Wire Cut
- ACID GRADE BRICK (ASTM 279)
- COKE OVEN CHUTE BRICK
- SLEEVES (9" to 18")
- NOZZLES

SAMRAK

Chrome Ore Products
Conshohocken, Pa.

KROMFRAC— Air-setting plastic monolithic lining for open hearth doors

SAMCAST—Hydraulic-setting 3000° F. castable refractory

KROMORT—Heat-setting mortar

KROMBOND—Air-setting mortar

GROUND CHROME ORE

FRANK SAMUEL & CO.

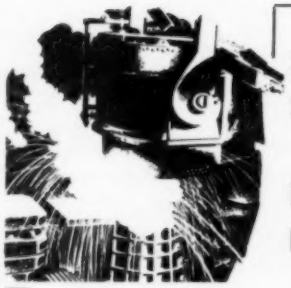
Incorporated

2200 Philadelphia National Bank Bldg.
Philadelphia 7, Pa. LOcust 4-6150

Our 70th Year

ORES • REFRACTORIES
CHEMICALS • METALS

New York—Pittsburgh—Cleveland—Cincinnati—Detroit—Chicago—St. Louis—Los Angeles—Richmond, Va.—Parkersburg, W. Va.—Birmingham—Jacksonville Montreal—Hamilton, Canada



SAVE TIME . . .
SAVE LOSSES
by using
DEPENDABLE
REFRACTORIES

- *Sleeves* • *Pocket Block*
- *Nozzles* • *Tuyeres*

Made by Carroll to resist

- Mechanical Shock
- Thermal Shock
- Erosion

SEND FOR LITERATURE IMMEDIATELY

Write — Wire — or Phone 169

CARROLL CLAY CO.

Carrollton, Ohio

Cut Down Firing Problems
That Cause Rejects . . . Lost Man Hours . . . Costly Shutdown

OPERATING THE TUNNEL KILN

(A "How-To-Fix-It" Handbook)

by J. T. Robson, Ph.D.
Allied Engineering Div. Ferro Corp.

Here, stripped of all theory, are the practical "cures" . . . handily indexed . . . for firing difficulties encountered in tunnel kiln operation.

$8.00 Per Copy

BRICK & CLAY RECORD

Book Dept.
5 South Wabash Avenue, Chicago 3, Illinois

Line your iron and steel ladles with Goose Lake Fire Clay Ladle Brick! Produced by the dry press method with a special de-airing process, Goose Lake Brick assures excellent resistance to basic slags, spalling and abrasion. It is well burned to provide high density, low porosity and uniform dimensions.

Fast, dependable service can be made to a matter of hours—by truck or rail—to the industrial mid-west.

a product of

ILLINOIS CLAY PRODUCTS COMPANY

Main Offices / Barber Building, Joliet, Illinois

Sales Office: / 208 South LaSalle Street, Chicago, Illinois

FIRE BRICK for Rugged Service

Made of the famous Kentucky Flint and Lawrence County Ohio, Refractory Clays

1ST QUALITY SELECTS IN TWO BRANDS

ASEE — O.K. CROWN

Kiln Run Quality

THE FAMOUS SAVAGE BRAND

Write—Wire—Phone 29 for Details . . .

OAK HILL FIRE BRICK COMPANY
OAK HILL, OHIO

OSWALD REFRACTORIES CO., INC.
1401 S. Brentwood Blvd.
St. Louis 17, Mo.

Recommends

SMITHFIELD Dry Press Fire Brick for kiln construction and repair. Excellent quality—outstanding appearance for contractor and retail trade.

CAR TOP TILE 2-, 4-, and 6-cell—various designs.

KILN FLOOR BRICK—All types—4-cell and 6-cell—lug—repressed or wire cut.

HOLLOW PIER TILE for Tunnel Kiln ware setting—Improved quality—Greater Recovery—Less cost.

INSULATING BRICK—All grades, for crowns and sidewalls.

"THE BEST THERE IS"

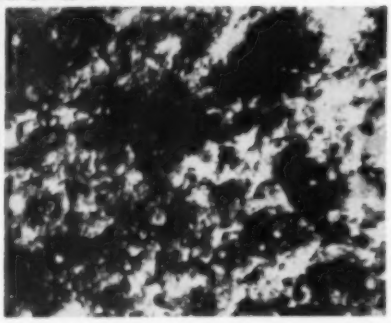
In Fire Brick—Acid Brick—Cements—Castables—Silica—Semi-Silica—Kiln Furniture—Flux Block—Pouring Refractories—Plastic Fire Brick—Pavers

QUALITY PRODUCTS & DEPENDABLE SERVICE
OVER 35 YEARS REFRACTORY EXPERIENCE

Compare these glazes

GLAZED WITH 100% SALT
BADLY CRAZED

Here's proof of what a borate-salt mixture can do for your ware!



GLAZED WITH 10% BORATE–90% SALT

for a better glaze at less cost...

RASORITE® Sodium Borate Concentrates

Improve your salt glaze, lower your costs—it's easy with RASORITE! This product is cheaper than either Borax or Boric Acid, yet it gives equally fine results. Use RASORITE to make your glazes more durable, more impervious to liquids, more uniformly free of crazing. Get the benefits of a borate-salt mixture—in lowered fuel costs, increased production and profits. Write today for details and technical data sheets.

MANUFACTURERS OF FAMOUS "20 MULE TEAM" PACKAGE PRODUCTS

United States Borax & Chemical Corporation

PACIFIC COAST BORAX COMPANY DIVISION

50 Rockefeller Plaza, New York 20 630 Shatto Place, Los Angeles 5

YARD TALK Continued

year term . . . Directors of Natco Corp. have named the new plant in Bessemer, Ala., for Roy Shipley, company president . . . Al Barnes, representing Carlton Goudge of Gladding, McBean and the Pacific Northwest Brick & Tile Assoc., associated with SCPI, (this is our entry in an involved sentence contest) presented a special award on behalf of the Producer's Council to Gene Zema. Zema, a Washington state AIA member, won the award for service to the brick industry. Back in Ohio, Paul Belden Jr. has been elected to a third term as president-chairman of the Ohio Public Expenditure Council.

We've received several new catalogs from plants, all good-looking material and would like to pass on a little credit to the companies involved. Natco has a fine-looking 24 page catalog of their entire line. Another beauty was sent to us by Alliance Clay Product; first catalog was of their line and the second was of a new, exclusive glazed brick line. Color range of the latter is yellow, white, brown, green, beige, blue, gray, pink-lavender and black.

Another book sent us was by Logan Clay Products in Ohio. Titled "A Bright New Chapter in Logan's Growth", the book tells of Logan's progress through the years and emphasizes their new plant, covered by B&CR recently. Barton Holl tells us that souvenir copies are available, if you'd like to see this, although they're primarily intended for customers, naturally.

Porter Names Stewart Mgr. Engineering-Refract.

Wilfred H. Stewart has been named manager of Engineering Services for the Refractories Div., H. K. Porter Co., Inc. Stewart will headquarter in Pittsburgh. He at one time worked for Kaiser Aluminum.

H-W Clearfield Supt. Lee Heath Retires

J. L. D. (Lee) Heath, superintendent of Harbison-Walker Refractories Co., Clearfield (Pa.) #1 Works, has retired. He began with H-W in 1906 and has worked in a supervisory capacity since 1911.

Buying

Materials Equipment Services?

B&CR offers readers quick service for your inquiries concerning any of the keyed items in the New Products pages, on this card, or in the special information sections. You can also get additional, complete information on any advertisement in this issue.

All you do is circle the number of the editorial item or the page number of the advertisement on this card, and mail it to us.

CAR TOPS—Paco car tops are said to cut your replacement costs as much as 50% because they're lighter weight, stronger and highly resistant to extreme thermal shock, have great resistance to hot load deformation. North State Pyrophyllite Co., Greensboro, N. C.

122/Circle on Reader's Service Coupon

KILNS—Payne Brick Co., of Texas, is now using a new 274' Swindell-Dressler Multi-Burner tunnel kiln. Preheating and oxidizing problems of their material are handled by atmospheric recirculation and excess air type burners. Kiln has a total of 72 burners, divided into 6 groups for control. Swindell-Dressler Corp., Pittsburgh 30, Pa.

123/Circle on Reader's Service Coupon

SWISS-LOK—The 54,300 sq. ft. building for Logan Clay's new plant was erected in only five days time with the use of Swiss-Lok buildings. Buildings are designed to save 1/3 steel weight, need greatly reduced crane service, need no welding, cutting, bolting or riveting at the site. Swiss Fabricating Co., Pittsburgh 2, Pa.

124/Circle on Reader's Service Coupon

PIPE JOINTS—Plain End Couplings are available to pipe manufacturers on a royalty basis, in diameters from 4" to 24". Fittings assemble easily, are flexible, hold pipe in compression, not under tension. National Sewer Pipe Ltd., Oakville, Ont., Canada.

125/Circle on Reader's Service Coupon

TAM—Lot after lot, Tam is consistently uniform opacifier. Complete line includes Superpax A, Superpax, Opax, Opax S, Treopax, Zircopax, and double silicates. Titanium Alloy Mfg. Co., New York City.

126/Circle on Reader's Service Coupon

STEELSTRAPPER—Acme now has a new, fully powered A4 Steelstrapper that tensions, seals and cuts steel strapping automatically, all with air power; one hand controls. Acme Steel Co., Chicago 27.

127/Circle on Reader's Service Coupon

GREEN FIRE BRICK—A. P. Green Fire Brick Co. has 13 plants and warehouses throughout this country and Canada, with wide distribution helping to lower shipping costs, lower your inventory costs and help you maintain steady production. A. P. Green Fire Brick Co., Mexico, Mo.

128/Circle on Reader's Service Coupon

JOINT PRIMER—Chem-O-'Sol has developed a new primer that weather can't break down. Primer is completely waterproof, activates over a wider range of pre-heating temperatures, sticks to a hot pipe immediately. Chemical Products Corp., East Providence, R. I.

129/Circle on Reader's Service Coupon

VARCO BUILDINGS—Payne Brick Co., of Elgin, Tex., chose Varco to build their clay storage building because of low cost and fast erection. Buildings in 60, 80 or 100' clear spans; can handle any type conveyor system up to a 24" belt; buildings are sturdy, with very low maintenance. R. G. Varner Steel Products Inc., Pine Bluff, Ark.

130/Circle on Reader's Service Coupon

CRUSHING COSTS—Reportedly can be cut in half with use of Williams heavy duty hammer mills. Machine can finish grind bank run clays and shale in single operation, including hard lime particles, iron pebbles, tailings. Said to save up to 75% of capital investment. Williams Patent Crusher & Pulverizer Co., St. Louis 6, Mo.

131/Circle on Reader's Service Coupon

1 CIRCLE Numbers of Interest to You! **2 MAIL** This Card at Once! **3 RECEIVE** Free Product Information

Please send me more information concerning the items I have Circled.

1-59

100-National Paint & Manganese Co.
101-Stanley Steel Strapping Co.
102-Chisholm, Boyd & White Co.
103-Bradney Machine Co.
104-Scandinavia Belting Co.
105-Robeson Process Co.
106-Thayer Scale Corp.
107-Edw. Orton, Jr. Ceramic Found.
108-F. R. Hannon & Sons
109-Cement Gun Co.
110-B. F. Drakenfeld & Co., Inc.
111-Buffalo Forge Co.
112-J. C. Steele & Sons
113-Walter C. Stoll & Sons
114-Fate-Root-Heath Co.
115-Ludlow-Saylor Wire Cloth Co.
116-Rockfacer Co.
117-Besser Co.
118-American Clay Machinery Co.
119-W. S. Tyler Co.
120-Deister Concentrator Co.
121-Link Belt Co.
122-North State Pyrophyllite Co.
123-Swindell-Dressler Corp.
124-Swiss Fabricating Co.
125-National Sewer Pipe Ltd.
126-Titanium Alloy Mfg. Co.
127-Acme Steel Co.
128-A. P. Green Fire Brick Co.
129-Chemical Products Corp.
130-R. G. Varner Steel Products Inc.
131-Williams Patent Crusher & Pulverizer Co.
132-Kaiser Aluminum & Chemical
133-Chambers Brothers Co.
134-Robinson Ventilating Co.
135-Des Moines Glove & Mfg. Co.
136-Engineering Associates, Inc.
137-Superior Supply Service Inc.
138-Sarjanian Glove Co.
139-Bonnot Co.
140-Paris Mfg. Co.
141-American Truck & Body Co.
142-O. Hommel Co.
143-McNally Pittsburg Mfg. Corp.
144-Gates Rubber Co.
145-International Clay Machinery Co.
146-Kimberly-Clark Corp.
147-Stoody Co.
Page 2 Bonnot Co.
Page 3 Williams Pat. Crusher
Page 4 Deister Concentrator
Page 5 Minerva Oil
Page 6 Builders Equipment
Page 7 Kimberly-Clark
Page 8 Buffalo Forge
Page 9 Metal & Thermit
Page 10-11 Kaiser Aluminum
Page 12 Bickerstaff, Inc.
Page 13 Besser Co.
Page 14 Ortruc, Inc.
Page 15 Miller Equipment
Page 16 Drakenfeld
Page 17 Chambers Brothers
Page 22 Titanium Alloy
Page 23 Dodge, F. W.
Page 24 Clearfield Machine
Page 25 Towmotor Corp.
Page 26 Timken Roller Bearing
Page 27 North American Mfg.
Page 28 Ohio Kilns
Page 29 St. Regis Paper Co.
Page 30 Varner, R. G.
Page 31 Harrop Ceramic Service
Page 32 Stoody Co.
Page 37 Pemco Corp.
Page 39 Ferro Corp.
Page 40 Lanly Co.
Page 47 North American Refractories
Page 48 Mexico Refractories
Page 49 Robinson Clay Products
Page 50 Gladding, McBean & Co.
Page 51 Walsh Refractories
Page 52 Harbison-Walker
Page 53 Kyanite Mining Corp.
Page 54-55 Ferro Corp.
Page 56 Babcock & Wilcox
Page 57 National Engineering
Page 58 North State Pyrophyllite
Page 59 Wellsville Fire Brick
Page 60 Harbison-Walker
Page 61 Denver Fire Clay
Page 62 Green, A. P.
Page 63 Vanderbilt, R. T.
Page 64 Chisholm, Boyd & White
Page 83 Globe Brick Co.
Page 83 Philadelphia Quartz
Page 84 Samuel, Frank
Page 85 Illinois Clay
Page 85 Oak Hill Fire Brick
Page 85 Oswald Refractories
Page 86 U. S. Borax
Page 89 West Virginia Pulp & Paper
Page 90 Robinson Ventilating
Page 91 Hendryx, Dwight B.
Page 92 Roura Iron Works
Page 93 Besser Co.
Page 93 Chase Foundry
Page 93 Schurs Oil Burner
Page 94 Universal Vibrating Screen
Page 95 Bradney Machine
Page 95 Robeson Process
Page 96 Hommel, O.
Page 96 Manufacturers Equip.
Page 96 Hannon, F. R.
Page 96 Stoll, Walter C.
Page 97 Lassman, Benjamin
Page 98 Orton, Edw.
Page 98 Paris Mfg.
Page 99 Overstrom & Sons
Page 99 Superior Supply Service
Page 99 Engineering Assoc.
Page 100 Gravely Tractors
Page 100 Ton-Tex Corp.
Page 100 Tyler, W. S.
Page 100 Foote Mineral
Page 101 Rockfacer Co.
Page 101 Des Moines Glove
Page 101 Eagle Iron Works
Page 104 Steele, J. C.
Page 105 Fate-Root-Heath
Page 106 American Clay Machry.

NAME _____ TITLE _____

COMPANY _____

STREET _____

CITY _____ ZONE _____ STATE _____

This Card Void After March 28, 1959

KAISER BUILDINGS—offer three cost saving advantages in aluminum roofing or siding sheet for your buildings: light weight, corrosion resistance and strength and durability. Kaiser can build your kiln buildings, clay storage sheds, etc. Kaiser Aluminum & Chemical Sales Inc., Chicago 11, or Oakland, Calif.
132/Circle on Reader's Service Coupon

BRICK MACHINES—and cutters by Chambers are engineered for high output. New 12AC brick machine, up to 300 hp., has all-steel construction and use of alloy materials to take care of today's standards and allow for tomorrow's more exacting extrusion problems. Chambers Brothers Co., Philadelphia 31, Pa.
133/Circle on Reader's Service Coupon

EXHAUSTER—The Robinson exhauster has three features that make it tops for recirculating hot air, up to 1650°: integral self-cooling, cartridge type wheel assembly removable from drive side; and high temperature insulation between outer skin and inner casing. Robinson Ventilating Co., Zelienople, Pa.
134/Circle on Reader's Service Coupon

GLOVES—Gloves, hand pads and mittens protect workers hands, are flexible and comfortable to wear, made of finest cowhide. Des Moines Glove & Mfg. Co., Des Moines, Iowa.
135/Circle on Reader's Service Coupon

TRANSFERS—The EA hydraulic transfer car has smooth drive, sturdiness to move brick and clay products fast over a long period of time. Engineering Associates, Inc., Asheville, N. C.
136/Circle on Reader's Service Coupon

BRICK SORTER—Superior makes a brick sorter that can sort brick by any dimension, into any number of groups desired. Handles up to 3,000 brick per hour. Superior Supply Service Inc., Bessemer, Ala.
137/Circle on Reader's Service Coupon

PLASTI-KING GLOVES—Has seamless wing thumb, tough but fully flexible. Gloves are infra-red cured for greater resistance. Sarjanian Glove Co., Detroit 9, Mich.
138/Circle on Reader's Service Coupon

BONNOT CHALLENGERS—At Federal Seaboard Terra Cotta are handling an extremely wide range of assignments, including manufacture of a unit that weights 135 lbs., is 2' long by 17" high. The plant's general foreman says, "Learn how to control dies and the Bonnot extruder will do everything you ask of it." Bonnot Co., Canton 2, Ohio.
139/Circle on Reader's Service Coupon

DRILLING—Fast drilling with heavy duty, four speed auger, finger tip control, 65 hp motor, all drives mounted on Timken Roller bearings; three leveling jacks to insure straight holes. Paris Mfg. Co., Paris, Ill.
140/Circle on Reader's Service Coupon

PACK-HAULERS—Can increase your profits by cutting per-thousand delivery costs, allowing use of smaller fleets, savings on insurance, upkeep and licenses. Split load deliveries can be made. American Truck & Body Co., Martinsville, Va.
141/Circle on Reader's Service Coupon

FRITS AND STAINS—Hommel has the frits and stains you need for glazed brick or tile. Glaze frits and body, engobe and glaze stains are made to meet all requirements. O. Hommel Co., Pittsburgh 30, Pa.
142/Circle on Reader's Service Coupon

KILN CARS—McNally Pittsburg kiln cars reportedly stay in service longer because of such features as MacAlloy iron, stress relieved, and special bearings protected for long service. Cold rolled steel axles are said to need no lubricant. McNally Pittsburg Mfg. Corp., Pittsburg, Kansas.
143/Circle on Reader's Service Coupon

SUPER V-BELTS—By Gates have such special features as Flex-Weave cover for greater flexibility, longer life; concave sidewalls that allow uniform contact with sheave groove; oil, heat, weather resistance. Gates Rubber Co., Denver, Colo.
144/Circle on Reader's Service Coupon

INTERNATIONAL—Brick machines have adaptability to produce good product whether you're making brick, refractories, cored block, pipe, tile or special shapes, with machines that can save up to 25% in power cost alone. International Clay Machinery Co., Dayton, Ohio.
145/Circle on Reader's Service Coupon

ADDITIVE-A—Use of Additive-A allows tempering water to penetrate more easily, requiring less water. Other advantages reported are increased green strength, improved clay workability, reduced dryer losses. Kimberly-Clark Corp., Neenah, Wis.
146/Circle on Reader's Service Coupon

TUBE BORIUM—Stoody's tube borium uses relatively coarse, ready-made tungsten carbide particles, rather than microscopic metallic carbides. What this means is that you can get one of the hardest, most abrasion resistant metals known for your hard surfacing work. Available in mesh sizes from 5-8 to 40 down. Stoody Co., Whittier, Calif.
147/Circle on Reader's Service Coupon

1 CIRCLE Numbers of Interest to You! **2 MAIL** This Card at Once! **3 RECEIVE** Free Product Information

BUSINESS REPLY MAIL
No Postage Stamp Necessary If Mailed in the United States

POSTAGE WILL BE PAID BY

BRICK & CLAY RECORD
5 South Wabash Avenue
Chicago 3, Illinois

FIRST CLASS
Permit No. 183
Chicago, Ill.

kiln. While claims are made for lower construction costs, a single track shuttle kiln would cost approximately the same as a tunnel kiln for the same number of cars and the same firing cycle.

A double track shuttle, however, can be built at a somewhat lower figure than a single track tunnel kiln, and this is the principal place where a saving can be made.

Handling Burned Ware

This is at present the most inefficient operation on both brick and sewer pipe plants. In most cases, the brick are handled at least twice between the kiln car and the truck or railway car, due to combining of shades, packaging, strapping, and variations in types of trucks used for delivery.

Whenever a man picks up a brick and lays it down again, he has added to the cost but not to its value. This seems like a very elementary statement, but it is overlooked more than any other principle in the handling of ware on a plant.

If the brick could be assembled into the shipping units directly as they are unloaded from the cars, the final loading of trucks might be done with a fork truck and no rehandling labor. Another method would be to simply set off the cubes of brick from the kiln car to storage by fork truck and then carry out the inspection, blending of shades, and cubing or packaging as the brick are loaded. Sewer pipe are usually stored in the yard with multiple forks, but full advantage of this same system is not always taken when loading trucks.

Buildings

The real cost of building materials is not the plant price, but the cost delivered all the way to the workmen on the scaffold or in the ditch. We believe that the greatest single development in the industry may occur in the very near future in the development of standard packages of brick which may be delivered mechanically to the scaffold, and in the use of trucks which can unload by mechanical means.

A large part of the cost of a new plant is the building. Great savings

(*Continued on page 90*)

STOP THIS !

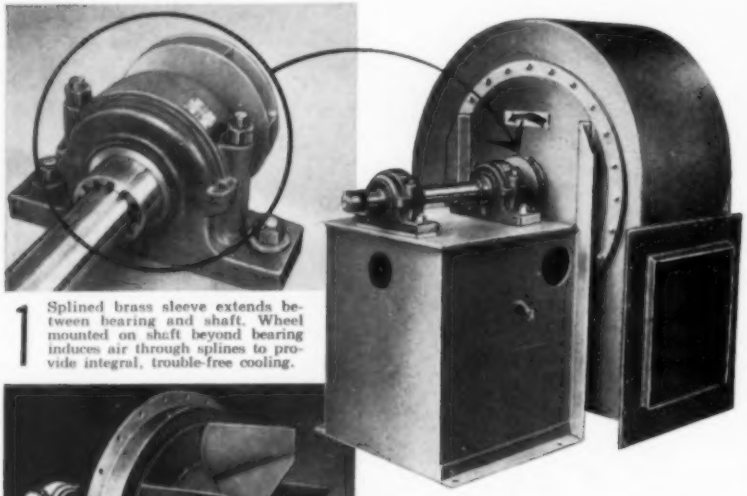
REDUCE LOSS.... INCREASE #1 YIELD BY USING *PROVEN* POLYFON BINDER

No one likes waste . . . and your brick scrap is PROFIT WASTE. This loss CAN be reduced by using the proven binder — POLYFON. POLYFON actually aids in controlling quality, gives increased production, plus greater profits for the same amount of materials used. We don't just claim . . . we know POLYFON allows you to use less water, gives you greater green and dry strength . . . we also know POLYFON gives your customers a better product.

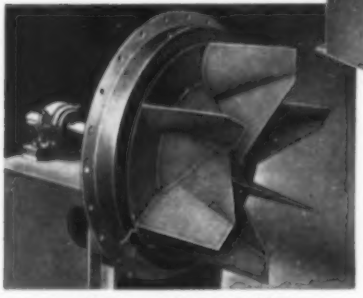
WRITE OR CALL FOR A POLYFON DEMONSTRATION IN YOUR PLANT

Polychemicals
DIVISION
WEST VIRGINIA PULP AND PAPER COMPANY
CHARLESTON, SOUTH CAROLINA

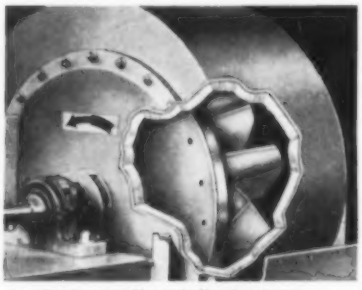
3 *outstanding features make this*
ROBINSON EXHAUSTER
BEST for recirculating hot air in kilns—up to 1650°F.



1 Splined brass sleeve extends between bearing and shaft. Wheel mounted on shaft beyond bearing induces air through splines to provide integral, trouble-free cooling.



2 Cartridge type wheel assembly is removed from the drive side of the exhauster. Inspection and maintenance of both wheel and exhauster is simplified and speeded, without entering kiln.



3 Steel outer skin and alloy inner casing are separated by high-temperature insulating material, minimizing heat loss in kiln air, and reducing heat radiation and conduction to other parts.

Three unusual features—exclusive integral self-cooling, cartridge-type wheel assembly, and carefully engineered use of insulation and alloys—help Robinson High-Temperature Exhausters give unsurpassed efficiencies in recirculating hot air in kilns. These important features are the results of Robinson's long experience in improving air handling procedures in the ceramic industry's high temperature operations.

Because a successful kiln or dryer design depends heavily on proper air handling, Robinson engineers will work in a consulting capacity with your designers and builders. It is added assurance that you will get the most economical and efficient firing and drying facilities.

If you are building new facilities, or refurbishing existing ones, specify Robinson—for superior air handling matched to proper kiln and dryer design.
Write today for literature.

INDUSTRIAL FANS · BLOWERS · EXHAUSTERS
ROBINSON VENTILATING CO.
119 HENDERSON STREET, ZELIENOPLE, PA.

HENDRYX Continued

can be made in the planning of the plant to avoid waste spaces in the building, and in arranging the layout so that the simplest types of building can be used.

Most clay working plants contain a lot of separate buildings, each of a different type, scattered all over the map. A modern plant can usually be designed to fit into a single simple rectangular building. Proper planning can easily reduce the area of the building, and consequently the cost, 30% or more, without crowding any of the operations.

Translucent skylights form the best method of lighting at the lowest first cost, and with no maintenance. Steel sash can be practically eliminated. Ventilation of a building containing hot kilns and dryers must be one of the prime considerations.

Provision must be made, not only for exhausting hot air out of the roof of the building, but also for admitting cooler air at floor level.

While construction materials and wages have increased to two and one-half times their 1940-45 prices, improved design and construction methods have made it possible to keep the over-all cost of the building down very close to the pre-war level. Steel costs more per pound, but the use of rigid frame design and sometimes of pipe in place of structural steel has kept sq ft. costs very nearly constant.

Buildings for clay working plants are subjected to attack from sulphur fumes, condensation of moisture, accumulation of dust, and many other evils. The rigid frame design simplifies maintenance by using simple beams in place of fabricated trusses which are difficult to paint. Very light members made of sheet steel rather than structural shapes in some standard buildings are to be avoided wherever possible.

Paint Your Buildings

Pipe structures are simple and permit easy painting. All structural steel buildings should be given a first class coat of corrosion resistant paint at the time of erection, before any sheeting is applied. This is rarely done, and new buildings are nearly always protected only by the priming coat of red

(*Continued on page* 91)

HENDRYX Continued

lead paint which was applied at the fabricating plan to prevent corrosion during shipment and erection. It costs more than twice as much to paint a building after the roofing and side wall construction are completed as it does to paint the structure during steel construction.

Corrugated aluminum sheeting lasts many times as long as galvanized steel, and does not cost much more on an erected basis. We are in the clay working business and would like to use structural clay products wherever possible, but a wall sheeted with corrugated aluminum costs only about half as much as a brick wall and can be moved much more easily when the plant is expanded.

A building should never be built first, before figuring out how the bins and equipment are going to fit into it. The bins can be made part of the building itself, and any superstructure above the bins can be carried directly on them, and not be a part of the general framing of the plant building.

Three Kaiser Sales Assignments Made

Three new sales assignments for Kaiser Chemicals Div. have been announced by Russel T. Drennan, general sales manager. Carl A. Snider, eastern region sales engineer, has been transferred to Los Angeles.

Thomas W. Bailey has taken over Snider's old territory, which included central Pa., Pittsburgh, W. Va., and parts of Ohio, Ky., and Va.

Floyd A. Hixon, formerly field installation representative in the eastern region, has been promoted to sales engineer serving the area handled before by Bailey in southern Ohio and eastern Kentucky.

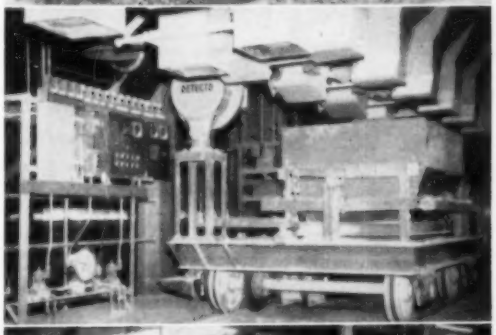
Huber Named Pemco Div. Mgr.

George S. Huber has been named manager of sales, Ceramic & Glass Color Div. of Pemco Corp., according to an announcement by Charles P. Lohman, vice president for marketing.

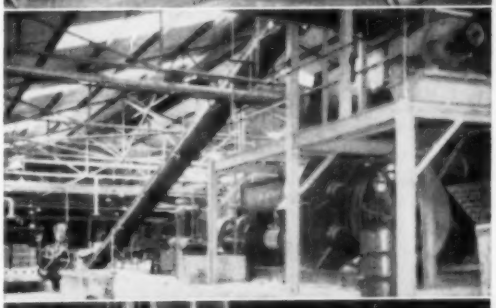
Huber has been with Pemco for 6 years. He succeeds J. E. Eagle, who died on June 29.

North American's Newest Plant Designed and Built by Hendryx

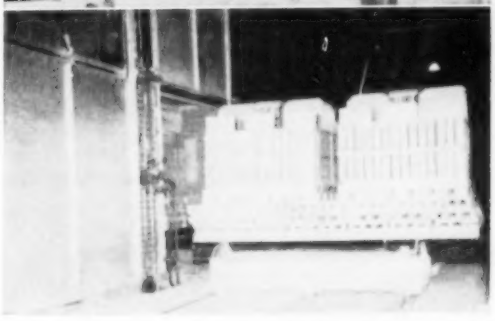
The crushing plant, rotary clay dryer, dust collectors and belt conveyor in the new North American Refractories Company plant in Farber, Missouri. The dryer is by-passed when the clay is dry.



View of a batch car under the clay bins. Crushed clays can be proportioned to the dry pan, or ground clays to presses and auger machine.



Auger machine and represses. Brick are set directly on kiln cars, or hand-molded shapes can be dried in humidity rooms before loading.



Kiln car entering Hendryx dryer, which handles both extruded and dry-pressed shapes.

North American Refractories Company's most recent plant, located in Farber, Missouri, is completely new from the receiving and processing of clay to the manufacture of brick by all processes. It was connected to the old plant without disruption of the existing usable facilities. Utilizing all the latest developments in clay processing and handling, the new plant will be an important milestone in the trend to lower cost ceramic plant operation.

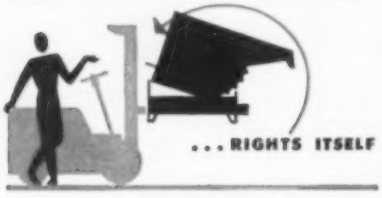
Hendryx ceramic plant design keeps the accent on the kind of shortcuts that produce tangible operating cost economies — in manhours, in power consumption, in maintenance —at the same time improving product quality.

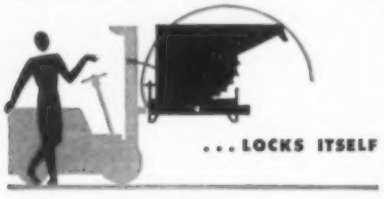
Hendryx engineering is a complete package, comprising buildings, clay handling, crushing, mixing, drying rooms, continuous dryers, and tunnel kilns — all of the latest, most efficient design—with complete supervision of construction, assembly and installation.

It will pay you to consult with us when planning your new ceramic plant or replacement facilities.

HENDRYX
INDUSTRIAL DESIGN

DWIGHT B. HENDRYX AND ASSOCIATES
6621 Darlington Road
PITTSBURGH 17, PA.





This hopper and your truck can cut handling costs 50%

It's a self-dumping hopper made for fast, efficient handling of wet or dry, hot or cold bulk materials, such as:

Scrap Metal . . . Cinders
Cullet . . . Hot Forgings
Punch Press Parts
Soybean Meal . . . Pickles

Hundreds of industries use thousands of them. Pick-up is swift and simple. Forks or platform of any standard lift truck slide easily into hopper underframe. Truck operator picks up loaded hopper . . . transports it to its destination . . . trips the latch . . . and the Roura does the rest . . . automatically.

They're strong . . . husky . . . made of 3/16" steel plate with continuous arc-welded seams. Also available in stainless steel or galvanized. Made in five sizes, ½ to 2 yard capacities, with live skids or a choice of wheels.

Standard models are available for immediate shipment from stock.

ROURA
Self-Dumping
HOPPER

WANT MORE DETAILS on how you can save money with Roura? Just clip this coupon . . . attach it to your letterhead . . . sign your name . . . and mail to

ROURA IRON WORKS, INC.
1224 Woodland Ave., Detroit 11, Michigan

WHITAKER Continued

production to 800,000 brick per day. This new plant has an automatic attachment which will hack the brick on pallets and place the brick on the dryer cars. Setting on kiln cars at this time will be done manually. This plant now has four tunnel kilns and four barrel arch Hoffman kilns fired by natural gas piped in from southern Russia.

There are other brick and tile plants in the vicinity of Moscow, of all types in regard to mechanization. Some appear to have been in operation for a long time.

Due to the slow travel on the highways, the only plant visited near Leningrad was the Popovka Brick and Tile Factory. Slow travel is due to low visibility produced by fog, rain. This is characteristic of the Leningrad area.

The Popovka plant produced brick from a soft shale on rotary dry presses and hacked directly on the kiln cars. Floor tiles are also made at this plant. This plant was built in 1956 to produce 150 million units per year. The 1957 output was 109 million and the factory is working to "norm" for 1958.

The preparation of the clay is done by what we call a disintegrator preceded by ribbed rolls that throw out occasional stones. Some of the material is passed through a rotary dryer meeting the other clay and both passing through revolving barrel screens to double shaft Mixers—the British term for our pug mills.

Rotary Presses

The production of each of these rotary presses are 72 brick per minute as each press produces 4 pairs of brick each revolution. Size of brick are 26 x 12 x 7 cm. with multiple frogs in one side of brick. Looking at that side, it gives the appearance of an extruded brick with 8 holes.

These brick are laid in the wall with the frog down. The frogs cut down the weight of brick and are supposed to improve the thermal insulation.

At Popovka there are 12 tunnel dryers about 100 ft. long and 6 tunnel kilns about 350 ft. long.

In hacking the brick and floor tile on the cars, a delivery belt from each press passes over the kiln cars where the floor tile can be boxed inside a surrounding wall of brick. Brick are unloaded by lift truck.

The managers, foremen, and technicians were very much interested in their work. They were eager in our discussions for new ideas and improvements, and a difference in language was easily overcome when a drawing could be used. However, my interpreter was excellent as he was a translator of technical English. The workers when they had the opportunity listened to a strange language and were impressed with a movie camera and especially a Polaroid camera.

Visit Ceramic Labs

One of the features of the visit to Moscow was the privilege to visit their Ceramic Research Laboratories. These three Research Laboratories are basic, control, and practical in their divisions. Some of their work was out of my field and I do not know if some of it was new, original, or repetition.

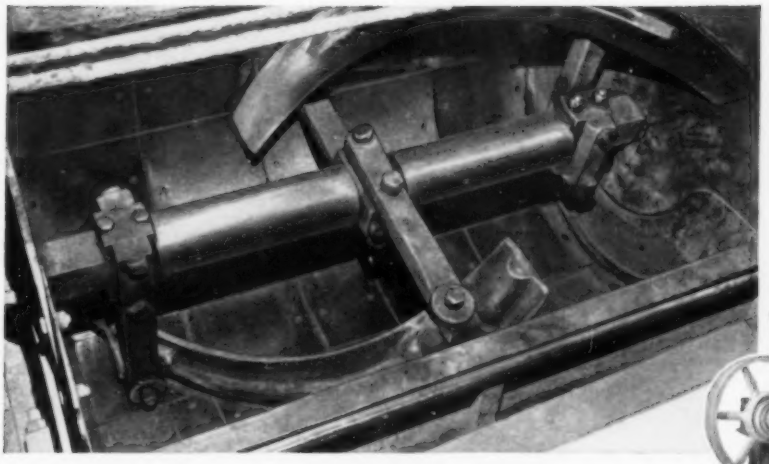
However in their pilot plant research laboratory, they are working in phases of structural clay. They are studying clay flow from the standpoint of extrusion and pressing. Some of their ideas of clay flow are contrary to some of my writing and I am still debating with Madame Vera Feedeva on some fundamental ideas of clay flow. Many of the research scientists are women.

At Kuchino we saw them dry pressing sewer pipe with the bell. In this laboratory they are making studies on automation. They are doing some extended studies on fast drying. They are experimenting on surface coatings on brick and tile to a depth of ¼ to ½ inch.

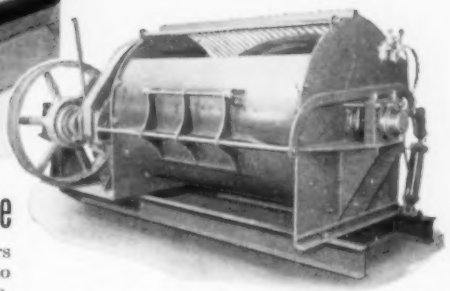
Lightweight Experiments

Their experimentation on lightweight aggregates was very interesting. One experiment was to fill partially a piece of flue lining with hollow tubes one inch OD and ½" ID in short lengths. Upon heating, these tubes expand both externally and internally, filling the piece of flue lining with insulating material. This is a start towards producing units directly from the viscous magna of expanded aggregate while in a heated state and not cool it first, then grind

(*Continued on page* 94)



BATCH MIXERS *by* BESSER



No liners or blades replaced during 4½ years service

The illustration above shows one of the two 50 Cu. Ft. Besser Batch Mixers after 4½ years of hard continuous service in a Mid-Western block plant. At no time during the 4½ years was it necessary to replace either blades or liners. Besser Mixers are built to resist toughest operating conditions. Drum shells are made of heavy rolled steel. Replaceable inside liner sections are made of Ni-Hard abrasion resisting iron. Extra heavy blade shafts prevent bending or twisting. Mixer Blade Shaft Covers eliminate build up and wear on blade shafts and permit easy cleaning. Twin spiral mixer blades are also made of Ni-Hard abrasion resisting iron. Thousands of enthusiastic users attest to Besser Mixer economy and long life performance. Ask for Bulletin A-7-150

• *Besser 50 cu. ft. mixer with motor, V-belt drive, steel cut gears running in a continuous oil bath and fully enclosed anti-friction bearings. Other sizes available: 5, 12, 18, 25, 30 and 40 cu. ft.*

Note: All blades and liners are made in Besser Company's own foundry and licensed by International Nickel to produce and sell abrasion resisting white iron under the trade name . . .Ni-Hard.

BESSER Company, Complete Equipment for Concrete Block Plants *Alpena, Michigan, U.S.A.*

IN PLANT OF ILLINOIS CLAY PRODUCTS CO., GOOSE LAKE, ILL.

CHASE DRYER CARS

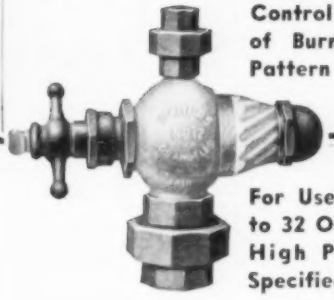
Cost less...Last longer

Fast, smooth-rolling, trouble-free service is built into every Chase dryer car. Initial investment and maintenance costs are low. Chase equipment is used in 80% of clay products plants. Send your specifications and requests for literature to Chase.

Chase *INDUSTRIAL CAR AND TRUCK BUILDERS FOR OVER FIFTY YEARS*
FOUNDRY & MANUFACTURING CO.
2300 PARSONS AVENUE • COLUMBUS 7, OHIO

SCHURS NO. 12

LOW PRESSURE OIL BURNERS



Control Handle at Rear of Burner Adjusts Flame Pattern

For Use with Air at 24 to 32 Ounce Pressure or High Pressure Air if Specified

"Be Sure Its Schurs!"

Versatile . . .

Efficient . . .

SCHURS OIL BURNER CO.
ESTABLISHED 1905
8500 Zamore Ave. Los Angeles 1, Calif.
WRITE FOR CATALOGUE TODAY

it to be added to concrete or clay for further processing.

In Moscow there is a permanent All-Union Exhibition of Building Material and Architecture. This Exhibition which covers about 15 acres shows many examples of reinforced and pre-stressed concrete building sections, prefabricated wall assemblies, specimen houses and industrial structures, many types of floor space design in the apartment buildings for families of different sizes as each family pays 4% of their income for living quarters. This Exhibition is also a Research Center for various types of wall construction such as prefabricated walls of honey combed concrete filled with insulating material.

Russia is a research paradise. Any idea that can be sold to the government officials is adopted and the man whose idea is accepted is given a citation and perhaps an increase in pay.

There is also a permanent Exhibition called the Industrial and Agricultural Exhibition near Moscow with each State of the U. S. S. R. having a building and each industry also having a building. This Exhibition covers 500 acres, comparing favorably with the World Exhibition at Brussels. There are sculpture sets, fountains, gardens, and spacious pavilions for the many regions and industries with a fine attendance from all over Russia. There are dormitories to house the visitors that come from the outlying sections of Russia.

The Russians are a proud people with an intense desire and a willingness to work for an improvement in their way of life. The officials of the brick plants appear to be as proud of the bathrooms, cafeterias, and recreation facilities for the workers as they are of the new plants.

Building Boom

In Russia at present there is an enormous building boom. Of recent construction, there are miles of 8 and 10 story apartment houses and dozens now under construction. The Russians claim to have built large square meters of living space in the last 5 years, which in America would amount to 60,000 acres. The present program calls for 10,000,000 housing units in big blocks and 300,000 bungalow type houses. It appears that the houses are suburban and the flats in the cities.

Flats are fire proof and most of the flats are not spacious but are as large as most flats anywhere. Each unit has toilet facilities and enforced sanitary conditions. The bathrooms are prefabricated in one piece, lifted by cranes into places provided by construction.

These apartments are constructed by the usual European method where a crane is used to take the materials of construction directly from the ground and placed on the scaffold which is inside the building and height of scaffold reaches from floor to floor. The cranes are mounted on tracks outside the building and the boom reaches to any part of building. An interesting feature is that these cranes mount and disassemble themselves.

My trip to Russia was motivated by a curiosity to visit their brick plants and also to observe anything else that presented itself. Many friends called me "Comrade" and Krusch-

(*Continued on page* 97)

ELECTRIC SCREEN HEATING AT IT'S BEST!

Repeat orders tell the story—Many Plants now operating six to ten Universals with Unilec heating. Whether you prefer Individual or dual-heating arrangement, you can be certain of finer screening and larger capacities through elimination of blinding.

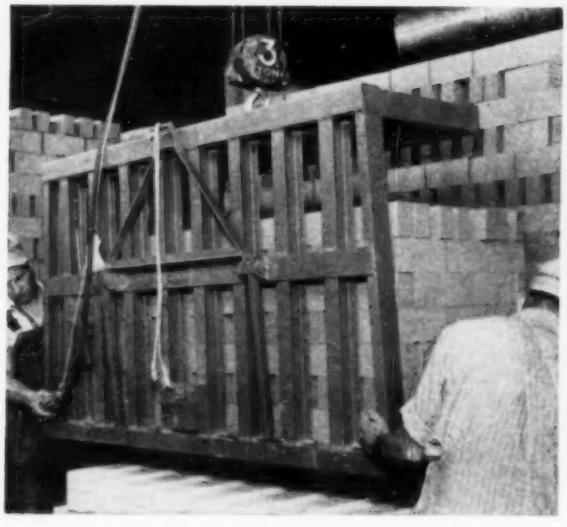
Shorter leads to eliminate current loss, split-secondary transformers for widest voltage range, cadmium-plated aluminum buss bars, assure you of highest efficiency and reliability.

THE SURPRISINGLY LOW COST, MADE POSSIBLE BY SIMPLICITY OF DESIGN, WILL INTEREST YOU. LET US SEND YOU SOME FACTS ABOUT UNILEC HEATED SCREENS TODAY!

UNIVERSAL VIBRATING SCREEN COMPANY

Racine, Wisconsin

Make Brick Handling Easy...

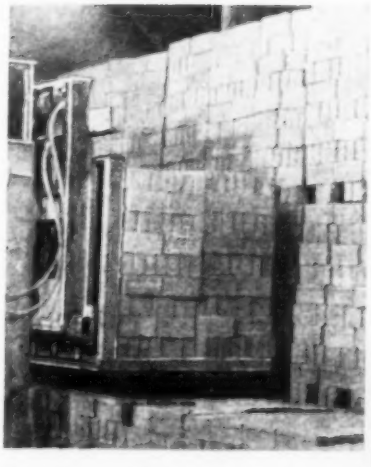


PRIESTER Brick Forks

- Save Time
- Save Money
- Save Labor

Also Priester truck cranes for unloading from delivery trucks. Write for bulletin.

Brick in units of any size are handled by Priester Brick Forks. Automatic operation simplifies and speeds brick handling setting and drawing kilns, loading and unloading trucks and box cars.



Forks with flap grippers for cored and solid brick. Give service . . . take the hard work out of brick handling. Write today for more information.

BRADNEY MACHINE CO., INC.
Middletown, New York

ORGANIC BINDERS

GLUTRIN
(liquid)
or
GOULAC
(powder)

Especially suitable for increasing the molding and dry strength of

- BRICK
- CLAY REFRACTORIES
- NON-CLAY REFRACTORIES
- SILICA REFRACTORIES
- REFRACTORY CEMENTS
- PLASTIC REFRACTORIES
- TERRA COTTA
- STRUCTURAL TILE
- SEWER PIPE
- SAGGERS
- FLUE LINING

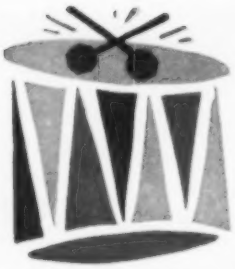
Small amounts required—easy to use. Economical and larger production of first quality product absorbs the investment many times.

Many successful users. We'll be glad to submit samples and our suggestion on procedures and amount needed.

Robeson Process Company

P.O. Box 960 • Erie, Pa.

We're Drumming Up Business...



every
Glazed Brick and Tile Producer
needs

HOMMEL

the best in

FRITS and STAINS

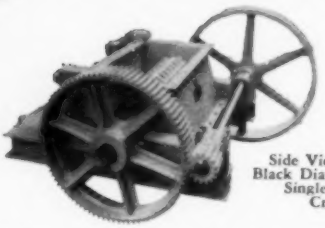
- **GLAZE FRITS**—Lead bearing and leadless compositions for all types of glazed ware.
- **GLAZE STAINS**—Pastel and brilliant color shades with wide firing range and stability at high fires.
- **BODY STAINS**—Made to meet all requirements of your clay body. Guaranteed uniform color.
- **ENGOBE STAINS**—A complete palette for slip painting and all-over Engobe decorations.

"The World's Most Complete Ceramic Supplier"

THE O. HOMMEL CO.
DEPT. BCR-1-59 PITTSBURGH 30, PA.
WEST COAST—4747 E. 49th STREET, LOS ANGELES

MECO
SINCE 1910

Eliminate Bottleneck In Primary Crushing!
WITH RUGGED, HEAVY-DUTY SERVICE
SUPER BLACK DIAMOND CRUSHER



Side View of Black Diamond Single Roll Crusher

Many plants have expanded their operations to keep up with the demands for more materials. Crushers intended for small load capacities, still in use, are frequently overloaded and abused. With the ever-increasing need for larger capacities of controlled material sizes, reduced manpower and maintenance costs, the Super Black Diamond Crusher is a definite answer. Designed and built for heavy-duty service, the exceptionally rugged Super Black Diamond Crusher is all steel constructed and embodies such advance features as; self-aligning roller bearings, toggle protection, interchangeable roll segments for different sizing and material requirements, automatic tramp-iron protection, and quick adjustment.

Plan NOW to supplement or replace your primary crushers with rugged, heavy-duty Super Black Diamond Crushers. Write today for Bulletin No. 579.

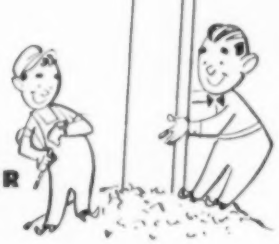
THE MANUFACTURERS EQUIPMENT COMPANY
218 MADEIRA AVE. • DAYTON 4, OHIO • Phone BA 2-5565

4 BIG REASONS

serve industry best

Hanco ELECTRIC SCREEN HEATERS

1 ELIMINATE BLINDING
•
2 INCREASE TONNAGE
•
3 BUILD GREATER PROFITS
•
4 SPEED PRODUCTION



PIONEERS IN
ELECTRIC SCREEN HEATING

F. R. HANNON & SONS Hanco
1605 Waynesburg Rd. S.E., Canton 7, Ohio

NOW

100% AUTOMATIC MOISTURE CONTROL

EMC 703

In Your Pug Mill or Batch Mixer.

The EMC 703 Includes Proven Electronic Control and Solenoid Operated Water Valves.

Automatically holds desired moisture content; insures against product size variation; removes human error.

Low Cost, Fool-Proof Control
Simple Installation

Write or Phone for Details

WALTER C. STOLL & SONS
5028 Alhambra Ave.
Los Angeles 32, Calif.
CApitol 2-1141

Skylar Made C-E Vice President

David Skylar, long associated with NCPMI and the clay pipe industry, has been appointed a vice president of Griswold-Eshleman Co., a Cleveland advertising agency. Skylar has been with G-E since 1949.

K-C Names Men for 4 Territories

Four territories have been created east of the Rocky Mountains for the sale of Additive-A, according to an announcement by Kimberly-Clark Corp. of Neenah, Wis.

Men and territories are: Arthur Stephenson, northeast, with office in Lansdowne, Pa.; Larry Hopkins, southeast, with offices in Asheville, N. C.; Charles Sanders, upper Middle West, to work out of Neenah; and Carl Hogue, lower Middle West, to work from Dallas.

Stephenson

Hogue

Hopkins

Sanders

WHITAKER Continued

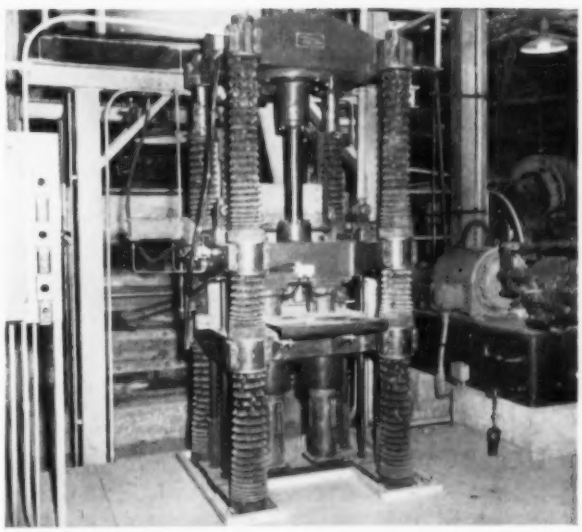
chev. At the meeting at Clemson I was presented with a jeweled beer can opener for setting the brick business in Russia back 20 years with a citation for accomplishing more than Secretary Dulles.

I appreciate the courtesies by Mr. Gvostarev and the others. Our conversation was confined to ceramics, personal stories, and typical American and Russian jokes. There was no haughty attitude of American bragging.

In this report you will find no qualifying statements of sarcasm as to the Russian religious, economic, and political system. That is not in my province. Most of my life has been lived with the understanding that I have freedom of religion, economic opportunity, and the political party of my choice. With this in mind I allowed the Russians the same prerogative. I did not go over there to reform them but to make observations and appreciate the freedom of movement they allowed me.

It is not a fair question to compare the U.S.A. with the U.S.S.R. as no country in the world can be compared with the U.S.A.

it's Lassman for **DRY PRESSING**



Fully Automatic Hydraulic Dry Press for manufacture of ladle sleeves.

For over 25 years we have specialized in dry press forming of refractory brick and briquetting of granulated materials. From $\frac{3}{4}$" thick floor tile to 16" deep ladle nozzles, we are able to provide a product of commercially uniform density and free from entrapped air laminations. Our presses, hydraulically powered, assure you of flexible, smooth performance without leaks and with minimum maintenance.

We welcome the opportunity to discuss your dry pressing problems with you.

Quality EQUIPMENT for *Quality* PERFORMANCE

BENJAMIN LASSMAN & SON Route 8, GLENSHAW, PA.

Orton standard pyrometric Cones

Your assurance of more uniformly fired ware

The accepted standard for over 65 years

Orton Cones have been the Standard of industry for over 60 years, primarily because of their uniformity and reliability.

Plaques of Orton Cones, placed so they may be observed through the kiln peep holes, permit a visual check on the progress of firing during its latter stages. While pyrometric cones do not measure temperature, they may be used to indicate the end point of firing and thus provide an accurate measure of the maturity of the ware and the distribution of "heat work". There are Orton Cones for every application.

A 56-page booklet, "The Properties and Uses of Pyrometric Cones", and the Foundation's Temperature Equivalent Table are available upon request.

Foreign Sales: International Division, The Ferro Corporation, 4150 E. 56th St., Cleveland, O., or the Foundation

the firing insurance of thousands

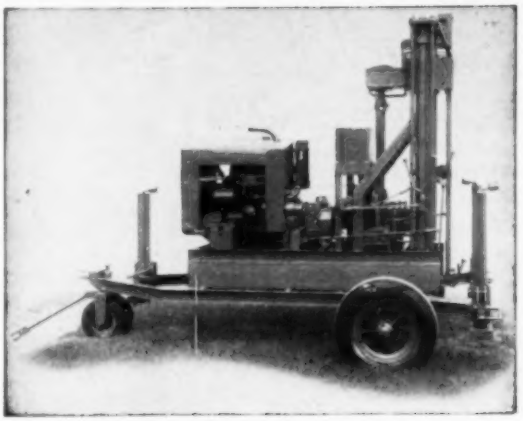
The Edward **ORTON** Jr. Ceramic **FOUNDATION**

1445 Summit Street Columbus 1, Ohio
AXminster 9-8023

IN MINUTES . . . INSTEAD OF DAYS

Samples obtained from depths up to 100 feet with the all new

Parmanco



Model HV-172
Hydraulic Vertical Drill

- **HEAVY DUTY**
- **FOUR SPEED AUGER**
- **FINGER TIP CONTROL**
- **65 H. P. MOTOR**
- **ALL DRIVES MOUNTED ON TIMKEN ROLLER BEARINGS**

RUGGED COMPACT EASY TO OPERATE

THREE LEVELING JACKS TO INSURE STRAIGHT HOLES. FIELD PROVED

Complete Information on Request

SPECIALISTS IN AUGER TYPE DRILLS

PARIS MANUFACTURING COMPANY

PARIS, ILLINOIS

Gates Appoints Three

Three promotions have been announced by Charles C. Gates Jr., vice president of Gates Rubber Co., Denver. H. Benjamin Duke has been made manager of industrial relations; Edwin Busch Jr. has been made divisional advertising manager for industrial products; and Warren S. Williams is manager of printing services.

Buffalo Forge Pres. Wendt Retires

Edgard F. Wendt, after 29 years as president and 47 years with the company, has retired from Buffalo Forge Co., of Buffalo, N. Y.

To succeed him, company directors have elected William R. Heath who has been with the company 36 years with service as chief engineer, director of manufacturing, vice president and executive vice president.

Porter Opens Chicago Warehouse

In addition to the recently announced expansion program at its Ottawa, Ill., works, the Refractories Div., H. K. Porter Co., Inc., will open a warehouse in Chicago at 4452 W. 5th Ave.

A complete stock of refractory brick, mortars, castables, plastics and ramming mixes will be on hand. Sales representatives A. M. Lieser, Charles Singleton and Chester J. Simmons have been added to the Chicago staff.

Sperber Named Hommel Pres. Asst.

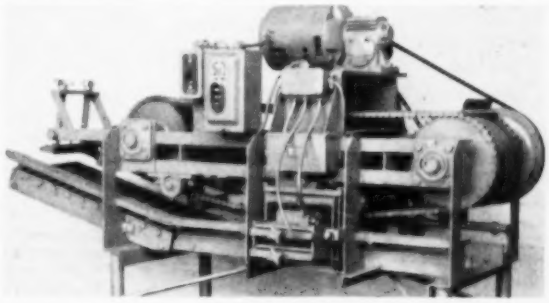
Robert E. Sperber has been named assistant to the president of O. Hommel Co., Pittsburgh, according to an announcement by Ernest M. Hommel, president.

where better clay screening is done ...OVERSTROMS are doing it!

All Overstrom Vibrating Screens are available with foolproof electric heating attachments. (Write for new 8-page catalog.)

LOOK FOR THE INVOLUTE SPRINGS AND YOU'LL FIND INVESTMENT IN QUALITY . . . PAYING OFF!

OVERSTROM & SONS, INC.
2213 WEST MISSION ROAD • ALHAMBRA, CALIF.



AUTOMATIC BRICK MEASURING & ASSORTING
3000 BRICK PER HOUR

• Our Model CMA1 shown above automatically measures brick for length and separates them into two groups.

First group contains brick that are within a predetermined tolerance or an exact length.

Second group contains brick that are over & under the required length.

• We can furnish machine for measuring any or all brick dimensions and assorting them into any number of groups you might desire.

YOUR INQUIRIES WELCOMED!

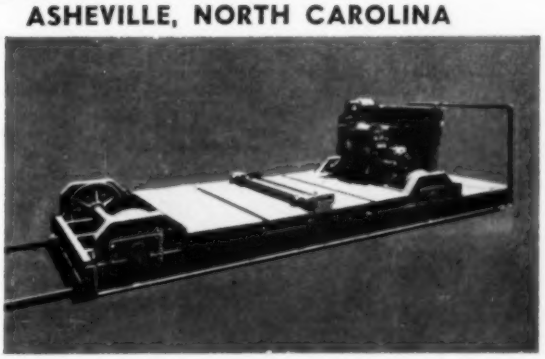
SUPERIOR SUPPLY SERVICE, INC.
P. O. Box 124 BESSEMER, ALA.

MANUFACTURER OF BRICK MAKING EQUIPMENT

☆ COLLINS EQUIDENSITY BRICK & TILE DIES
☆ DRY-PRESS & REPRESS OUTFITS
☆ GREEN BRICK CUTTERS
☆ TEXTURE DEVICES
☆ SPECIAL PURPOSE EQUIPMENT

ENGINEERING ASSOCIATES, INC.
P. O. BOX 5284 ASHEVILLE, NORTH CAROLINA

The EA Hydraulic Transfer Car has brought response that has amazed even us. The smooth drive has proven itself not only in red brick plants, but also in refractories, sewer plants. New plants have been designed and built around the use of a pusher on the car and existing plants have been improved based on same. Why not look into this?



Represented By: **Forrest A. Paschal**
Box 289, Siler City, N. C.

...it's **FOOTE CHROMITE**

for that "natural" coloring in Bluish Gray Bricks

Foote Chromite, when added to buff burning clays, produces highly attractive bluish gray shades that match closely the many shades of natural limestone. Additions of this natural chrome ore in quantities as small as ¾ to 1% produce appreciable coloring values at moderate firing temperatures. Screen analysis of Foote air-floated Chromite is rigidly held to assure uniformity of tone and color development.

Write for complete details on Chromite, Ebony Manganese Ore, Petalite, and Foote's many other ceramic materials.

FOOTE MINERAL COMPANY
442 West Chelten Building
Philadelphia 44, Pa.

Move Kiln Cars at Big Saving!

"We just couldn't do without our Gravelys" . . . write important brick and tile manufacturers who've been using them for years for moving kiln cars in and out of kiln and to other stations.

The Gravely LS Tractor—geared-down 6.6 HP, low-speed model, with dual wheels and governor—is the answer. It's small enough to work in crowded areas, yet powerful enough to move loaded cars up to 310,000 lbs. Toolholder fits coupling unit on cars. Two speeds forward and reverse allow operator to move cars in either direction.

But that's not all! The same Gravely, offering 30 different attachments, takes care of every grounds maintenance job, from mowing lawn areas to power sweeping loading docks and drives. Eliminates expensive equipment, saves time, labor, money.

Write TODAY for descriptive literature, or for Free Demonstration under your own conditions. No obligation.

GRAVELY TRACTORS, INC.
BOX 649-A DUNBAR, W. VA.
PERFORMANCE-PROVED SINCE 1922

Oily and Wet conditions can be tough on conveyor belting

TON TEX

. . . but not on TON-TEX OIL-EX BELTS

OIL-EX Conveyor Belting gives outstanding service on oily and wet installations. It is made of plies of tightly woven cotton duck and a binder of Neoprene and special compounds.

Oil-Ex is highly resistant to oil, water, kerosene, heat and abrasion. Minimum stretch and shrinkage. Seldom requires "take-ups." Will not mark surfaces of finest quality face bricks. Oil-Ex can be vulcanized endless.

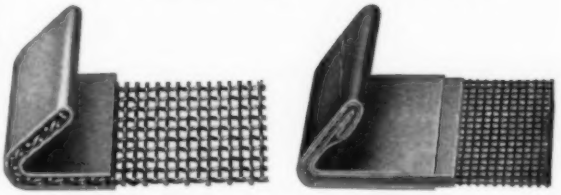
Ton-Tex Oil-Ex is widely used for *off-bearing* and *measuring* belts. It operates better and lasts longer.

Write for catalog showing Ton-Tex installations in various industries.

TON-TEX CORPORATION
GRAND RAPIDS 2, MICH.
ENGLEWOOD, N. J. SAN JOSE 26, CALIF.

TON-TEX CONVEYOR AND TRANSMISSION **BELTING**

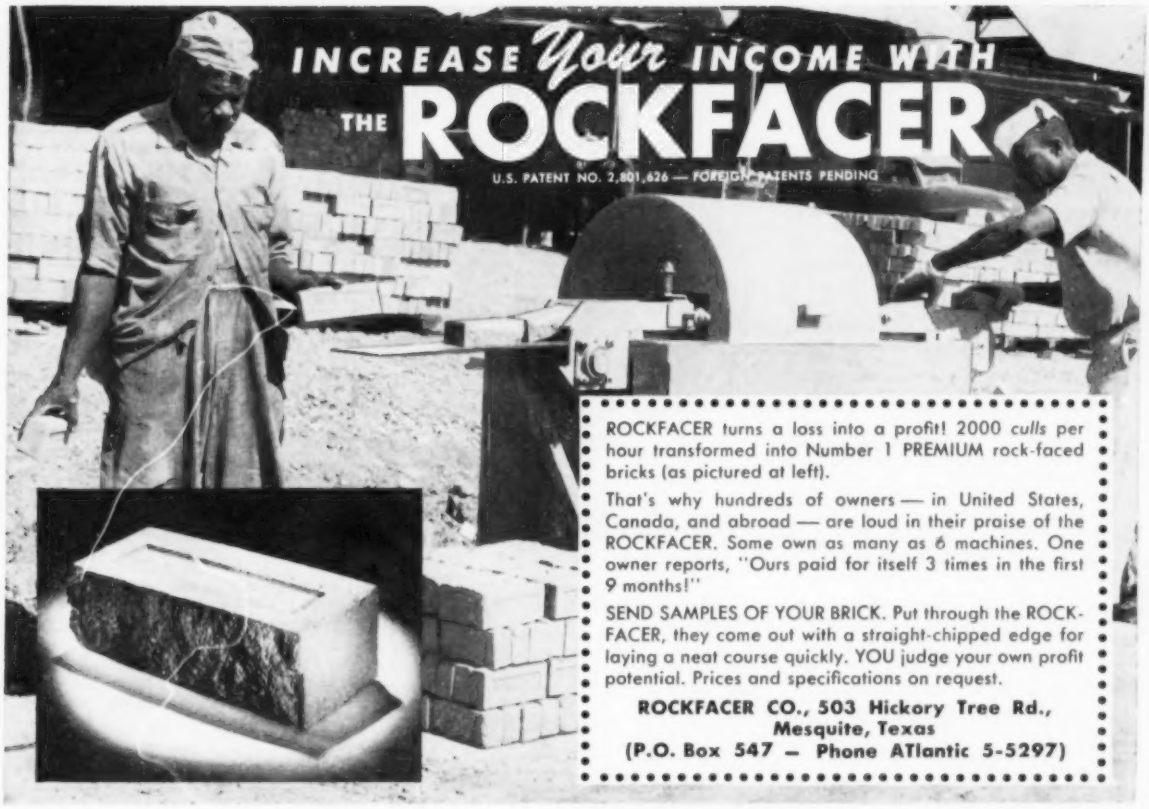
Tyler Screen Sections for All Makes of Screening Machines!



Screen sections of Tyler Woven Wire are fabricated for all makes of vibrating screens in any mesh or metal. They are made up with hook-strip or bent-edge construction to suit the machine on which they are to be used.

Tyler rugged, accurately-applied hook-strips make possible stretching and maintaining the screens at drum-head tension, which is essential for successful screening and long screen life.

THE W. S. TYLER COMPANY
CLEVELAND 14, OHIO
Manufacturers of Woven Wire Screens and Screening Machinery
Canadian Plant—St. Catharines, Ontario, Canada



INCREASE *Your* INCOME WITH THE ROCKFACER

U.S. PATENT NO. 2,801,626 — FOREIGN PATENTS PENDING

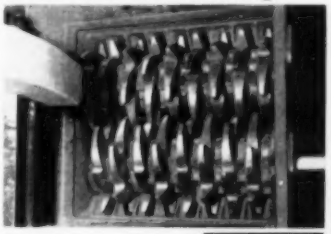
ROCKFACER turns a loss into a profit! 2000 *culls* per hour transformed into Number 1 PREMIUM rock-faced bricks (as pictured at left).

That's why hundreds of owners — in United States, Canada, and abroad — are loud in their praise of the ROCKFACER. Some own as many as 6 machines. One owner reports, "Ours paid for itself 3 times in the first 9 months!"

SEND SAMPLES OF YOUR BRICK. Put through the ROCKFACER, they come out with a straight-chipped edge for laying a neat course quickly. YOU judge your own profit potential. Prices and specifications on request.

ROCKFACER CO., 503 Hickory Tree Rd., Mesquite, Texas
(P.O. Box 547 — Phone ATlantic 5-5297)

Many REFRACTORY PLANTS Use EAGLE CRUSHERS for Reclaiming Unburned Culls and Rejects!



THEY have found Eagle Double-Roll Clay Crushers most efficient and economical for salvaging rejected bricks and shapes from the dies and presses. Rejects are quickly crushed so that material is easier to re-pug or transport back for re-grinding.

The Eagle Standard Crusher shown is handling green brick rejects at Harbison-Walker Refractories, Clearfield, Pa. plant—one of the many Eagles installed at their plants. For raw clay or rejected bricks and shapes you can't beat Eagle Crushers.

Get the Inside Facts— Send for Bulletin 952.

THE EAGLE LINE

GRINDERS

CLAY CRUSHERS

SHALE PLANERS

SINCE 1872

EIW EAGLE IRON WORKS

EXPERIENCE, PROGRESS, SERVICE SINCE 1872

EAGLE IRON WORKS

131 HOLCOMB AVE., DES MOINES, IOWA

Tufhorse KANT-RIP HAND PADS MITTENS GLOVES

NO. 308

PROTECT WORKERS' HANDS!

HEAVY SPLIT-COWHIDE HAND PAD NO. 308, TIE BACK. $7.20 PER DOZEN PAIRS.

Avoid costly injuries to the hands of your workers by giving them the protection they need—Tufhorse gloves, hand pads or mittens. Made of the finest cowhide, they are flexible and comfortable to wear.

ORDER SAMPLE PAIRS AT "PER-DOZEN" PRICES

Please send me samples of ✔

- ☐ Glove No. G-9 ($16.50 per dozen pairs)
- ☐ Mitten No. 300 ($12.60 per dozen pairs)
- ☐ Hand Pad No. 308 ($7.20 per dozen pairs)

(All F.O.B. Des Moines)

Name_____

Firm_____

Address_____

City_____ State_____

DES MOINES GLOVE & MFG. CO.

DES MOINES, IOWA

CLASSIFIED ADVERTISEMENTS

Limited to Want Ads, Consulting Engineers, or Used Equipment ads, (wanted or For Sale)

TRANSIENT WORD ADS: 12c per word for each insertion.

Headings such as "Wanted", "For Sale", etc. and address to be counted as part of the ad. Minimum charge $2.00 each insertion.

POSITION WANTED ADS: $1.50 for 25 words or less; each add'l word 10c.

FOR USE OF BLIND ADDRESS: (Care of BRICK & CLAY RECORD) count as 15 words to cover cost of handling and forwarding replies.

DISPLAY-BOX TYPE ADS

$15.00 per inch. On advance orders for twelve consecutive issues, 12.00 per inch per insertion. (No retroactive adjustment).

An inch is measured vertically on one column, 2¼" wide; three columns on a page. For a two-column advertisement add together height in each column.

Display classified advertisements are set and rates apply in half-inch multiples. (1 inch minimum; 5 inch maximum).

Add 25% to above rates for Reverse Plate (white lettering on black background).

All rates based on payment in advance except on regular contract.

No Agency Commission or Cash Discount

BRICK and CLAY RECORD

5 South Wabash Avenue, Chicago 3

POSITION WANTED

MANAGER—20 years experience in research, plant engineering, plant construction, and complete manager including sales for 10 years, in both refractories and face brick. Graduate engineer experienced with both tunnel kilns and periodics. Address Box 1-LKN care of BRICK & CLAY RECORD. 1-1

FOR SALE—USED EQUIPMENT

MIXERS: #2, #3 Simpson, #930 Clearfield. Complete Boyd DRY PRESS PLANT, Automatic Boyd 4 mold. Gates 2 mold DRY PRESSES. BRICK MACHINES: (dearted) FRH Jr. & Sr. Intl. Vac-Air Chemist, Steele 40, Bonnot 497, Amer. 404A,290. 2 Bonnot Greyhound comb. Non-desired: Steele #2, Ray w/10" auger. 7" & 9" DRY PANS. 8' WET PAN. MILLS: 4½x16", 6x48", 7x36", 6x15 Ball. 5x17 5x21 Tube. 6x14 Rod. 10', 12', 14' PUG. 8x124, 8x170 & 8x9x100 KILNS. CUTTERS: Steele #18, Chambers 22. CRUSHERS: 24x10, 12x18, 32x18 Dbl. Roll. Brewer 1822 conical, 816, 1536, 4042 JAW. DRYERS: 2½x36, 4½x35, 5x40, 6x50, 8x70. Vib. Screens, Loaders, Shovels, Draglines.

MID-CONTINENT EQUIPMENT CO. INC.
8321 Gannon St. Louis 24, Mo. Wydown 1-2826

FOR SALE—J. C. Steele No. 18 Automatic Cutter, Boyd "B" Dry Press, Two Nine foot Dry Pans. Bill Taylor, Sulphur Springs, Texas. 1-1

Air Compressors: 676, 1500 & 2200'
Side Dump Cars: 120—1½, 2, 3 and 12 Yards
Gasoline Locomotives: 4, 6, 8 and 14 tons
Diesel Locomotives: 6, 10, 25, 45, 65 and 80 tons
Smooth Roll Crushers: J. C. Steele 12" and 18"
Automatic Cutter: Freese Model C-25
Rotary Dryers & Kilns: 4'x20', 5'x30',5'6"x50', 80"x60', 6'x120', 7'x180' and 8'x125'.
WANTED—Air Compressors—Dryers—Locomotives

R. C. STANHOPE, INC.
603 42nd St. New York 17, N. Y.

FOR SALE

ROTARY KILNS: 11'x155', 8'x170', 8'x125', 8'x 115', 8'x50', 7'x120', 6'x60', 4'x24'
ROTARY DRYERS: 8'8"x70', 6'x50', 4'8"x32', 4'x 30', 3'x15', 2'x9'
CRUSHERS: JAW—20"x6", 18"x9"; GYRATORY, 100 HP
HAMMERMILL: Penns. Crusher NON-CLOG, 400 HP, UNUSED, 1952, #DNC-5060
PUG MILLS: 30"x14', 7"x3'6", T347 SS

PERRY EQUIPMENT CORP.
1432 N. 6th St. Phil. 22, Pa.
POplar 3-3505

FOR SALE—USED EQUIPMENT

FALL BARGAINS

DE-AIRING MACHINES, #30 JC Steele, FRH #6WJ6, Bonnot Combination, Chambers #9C, American 404-A, International #470, International Falcon.
CUTTER, Steele #18, Model BLH, Freese C-25, and C-20.
ROLLS, Disintegrating, Steele 24 x 24, 12 x 24, smooth roll 18 x 24.
DRY PAN, 9' Stevens, 9' Bonnot.
SCREENS, Tyler Hummer, Cedar Rapids, Sturtevant.
DRYERS, Rotary. Various sizes from 2x30 to 8 x 175.

FERNHOLTZ MACHINERY CO.
8468 B Melrose Place
Los Angeles 46, California

RAILS AND DRYER CARS

100 Single Deck
100 Mud Brick Rack Cars
50 Double Deck Cars

All sections rails and track supplies. New Wood Pallets made to your specifications.

M. K. FRANK

401 Park Bldg. Pittsburgh 22, Pa. | 480 Lexington Ave. New York 17, N. Y.
105 Lake Street Reno, Nevada | 1209 Metropolitan Bank Bldg. Miami 32, Florida

FOR SALE

DRYER CARS—150 Single deck 24" gauge.
DRY ANS—Bonnet 9, Clearfield 8½', 9' new.
BRICK MACHINES—De-Aired Steele 30 & 40 E. Fate
CUTTERS—Steele late models Left & Right hand.
CRUSHERS—Eagle Iron Senior, MECO 18"x24".
FEEDERS—Apron 30"x10', 42"x18' with drives.
PUG MILLS—Bonnot 12', Brewer 10'.
SCREENS—Starrh eated 5'x6' complete.
ELEVATORS—Bucket with castings. 42' & 32' ctrs.
REPRESS—Bonnot Special.
New, Used and Rebuilt Equipment for Brick & Tile and Clay Industry.

HERMAN A. HALL
Wyomissing, Pa. FRanklin 24310

WALTER C. STOLL & SONS
New and Used
CLAY WORKING MACHINERY
5028 Alhambra Ave., Los Angeles 32, Calif.
CApitol 2-1141

FOR SALE

BRICK MACHINES—Combination & Deairing
PUG MILLS—Single & Double Shaft
GRANULATORS—Chambers 51 & Freese 16
CUTTERS—Steele 18, Freese & Hand
DRY PRESS—Boyd 4 mould Special
DRY PANS—4', 7', 9'
HAMMER MILLS—4"x8" to 36"x42"
SMOOTH ROLLS—16x30, 30x36
CONICAL ROLLS—Corrugated
DISINTEGRATERS—12", 18" & 24"
JAW CRUSHERS—9x16, 15x24, 24x13
SINGLE ROLL CRUSHER—30" x 30"
ROTARY DRYERS & KILNS—2x20, 3x30, 6x40, 7'x80'
STEELE #30 DEAIRING MACHINE
HAND TILE PRESS
MIXERS—Lancaster EAG 3 & 4, Clearfield #610, Simpson #3, Blystone
SCREENS—Hummer 3x5, 3x10, 4x10 Cedar Rapids 3½ x 10
REPRESS—Bonnot 2-mould
FEEDERS—Disc Apron, Reciprocating, Even
HARDINGE CONICAL MILLS—3', 7', 10'
PEBBLE MILLS—Various Sizes

List your spare equipment with us.

ROBERT L. CLARE
212 Rector St. Perth Amboy, N. J.
Phone Hillcrest 2-0061

FOR SALE—USED EQUIPMENT

FOR SALE

PULLEYS of various sizes, face and bores.
ELECTRIC MOTORS, various H.P. and speeds.
BREWER Heavy Duty Conical Roll Crusher.
STEELE No. 5 Hoisting Drum for pulling up cars.
KILN COOLING FANS, 48 and 24", Motor Driven Propellers.
CLAY STORAGE SHED, Steel Frame, 50' x 100', 200' **Clay Storage** Shed Conveyor, 20", motor driven.

GRANT BRICK WORKS
Weldon, N. C.

6—Single surface Tyler Niagra 3' x 6' open typed vibrating screens
1—Allis Chalmers Gyratory sifter 11 Sieve size 30" x 30"
1—Raymond double whizzer mill
1—54' x 9" screw feeder with Falk reducer & 2-h.p. electric motor
1—Chain & bucket elevator 40' with Motor & Falk reducer
1—Sullivan two drum hoist, near new bargain
1—12' x 9" Screw feeder with reducer & motor
1 Day Pulverizer, used about 30 Days like new
1—9" x 12" Day jaw crushers, Excellent $450.00

We can supply most sizes in jaw crushers, cones, rolls, feeders, conveyors.

Charles A. Constance & Sons
Box-2222 Asheville, N. C. Phone Alpine 3-3968

FOR SALE

80 Kiln Cars: 6' x 44" Tops, Cast Iron. 22-5/16 Ga. with Cage Roller Bearings. Two Transfer Cars; 7'6" x 5'. 48" Ga.

Levin Scrap Company
P. O. Box 464 Peru, Indiana

CRUSHERS—JAW—9 x 16—13 x 24—36 x 10—15 x 30—24 x 36—36 x 48
SCREENS—3 x 10—4 x 10 Tyler Hummer—42" x 10' Cedar Rapids—60" x 12' Robins—60" x 12' Deister (Plato)
PUG MILLS—9' Freese—9' Chambers—12' Bonnot—10' American (2 shaft)—15' Chambers granulator
DRY PANS—7' American—9' Bonnot (heavy)—9' Chambers (pneumatic muller suspension)
DRY PRESS—4 Mold Boyd w/drive
BRICK MACHINES—#223 American—#30 Steele de-air.—Bonnot De-Air w/18" auger
CUTTERS—#18 Steele Automatic 10" & 14"—Bonnot draintile
SEWER PIPE PRESS—Pearne & Lacey Vertical w/dies, like new, w/hydraulic system

LAWLER COMPANY
Metuchen, N. J. Liberty 9-0245

WANTED USED EQUIPMENT

WANTED—18 x 36 or 18 x 42 Single Roll Crusher. The Bowerston Shale Company, Dept E, Bowerston, Ohio. 1-1

WANTED—1 Pulverizer—1 Rotary Kiln approximately 6 feet diameter 60 feet long. West Virginia Brick Company, Charleston 24, West Virginia. 1-1

FOR SALE—PLANT

FOR SALE—BRICK plant, in operating condition in New Mexico. Best shale deposit in state. Owner wishes to retire. Address Box 11-QBH, care of BRICK & CLAY RECORD. 11-4

FOR SALE—Two kiln drain tile plant in Northwestern Ohio. Running two kilns weekly, year around. Address Box 1-EAS care of BRICK & CLAY RECORD. 1-2

INDEX TO ADVERTISERS

A

*American Clay Machinery Div. of Huber-Warco Co. 106

B

*Babcock & Wilcox Co. 56
Besser Co. 13-93
Bickerstaff, Inc. 12
*Bonnot Co. 2
Bradney Machine Co. 95
Brick & Clay Record 84
Builders Equipment Co. 6
Buffalo Forge Co. 8

C

Carroll Clay Co. 84
*Chambers Brothers Co. 17
Chase Foundry & Mfg. Co. 93
*Chisholm, Boyd & White Co. 64
Classified Ads 103
Clearfield Machine Co. 24

D

*Deister Concentrator Co. 4
Denver Fire Clay Co. 61
Des Moines Glove & Mfg. Co. 101
Dodge Mfg. Corp. 23
*Drakenfeld & Co., B.F. 16

E

Eagle Iron Works 101
Engineering Assoc. 99

F

*Fate-Root-Heath Co. 105
*Ferro Corp. 39-54-55
*Foote Mineral Co. 100

G

Gladding McBean & Co. 50
Globe Brick Co. 83
Gravely Tractors 100
Green (A.P.) Fire Brick Co. 62

H

*Hannon & Sons, F. R. 96
*Harbison-Walker Refractories Co. 52-60
*Harrop Ceramic Service Co. 31
*Hendryx & Associates, Dwight B. 91
*Hommel (O.) Co. 96

I

*Illinois Clay Products Co. 85

K

Kaiser Aluminum & Chemical Corp. 10-11
*Kimberly-Clark Corp. 7
*Kyanite Mining Corp. 53

L

*Lanly Co. 40
Lassman & Son, Benjamin 97

M

Manufacturers Equipment Co. 96
Mexico Refractories Co. 48
*Metal & Thermit Corp. 9
*Miller Equipment Co. 15
*Minerva Oil Co. 5

N

*National Engineering Co., Simpson Mix-Muller Div. 57
*National Lead Co., Titanium Alloy Mfg. Div. 22
North American Mfg. Co. 27
North American Refractories Co. 47
*North State Pyrophyllite Co. 47

O

Oak Hill Fire Brick Co. 85
Ohio Kilns 28
*Orton, Jr., Ceramic Foundation, Edw. 98
Ortrue, Inc. 14
Oswald Refractories 85
Overstrom & Sons 99

P

*Pacific Coast Borax Div., United States Borax & Chemical Corp. 86
Paris Mfg. Co. 98
*Pemco Corp. 37
Philadelphia Quartz Co. 83

R

*Robeson Process Co. 95
Robinson Clay Products Co. 49
*Robinson Ventilating Co. 90
*Rockfacer Co. 101
Roura Iron Works 92

S

St. Regis Paper Co. 29
*Samuel, Frank & Co. 84
Schurs Oil Burner Co. 94
*Simpson Mix-Muller Div., National Engineering 57
*Steele & Sons, J. C. 104
Stoll & Sons, Walter C. 94
Stoody Co. 32
Superior Supply Service 99

T

Timken Roller Bearing Co. 26
*Titanium Alloy Mfg. Div., National Lead Co. 22
Ton-Tex Corp. 100
Towmotor Corp. 25
*Tyler Co., W. S. 100

U

*United States Borax & Chemical Corp. Pacific Coast Borax Div. 86
*Universal Vibrating Screen Co. 94

V

Vanderbilt (R.T.) Co. 63
Varner (R.G.) Steel Products 30

W

Walsh Refractories Corp. 51
*Wellsville Fire Brick Co. 59
West Virginia Pulp & Paper Co. 89
*Williams Patent Crusher & Pulverizer Co. 3

*See Our Catalog in 1958-59 Ceramic Data Book

MISCELLANEOUS

Forrest A. Paschal
Phone Sherwood 2-2749 & 2-2500
P. O. Box 289 — Siler City, N.C.

Representing:

Huber Warco	Deister Concentrator
Robinson Ventilating	Engineering Associates
Lippmann Engr. Wks.	Manufacturers Equip.
Southern Fabricating	

FOR SALE—BUFF BURNING FIRE CLAY, lump or ground. Ask for prices at mine or delivered via truck or railway. Booz & Co., Macomb, Illinois.

KILNS, DRYERS
Complete Plant Design
For
Brick, Tile, Pipe, Refr.
Investigations — Reports
Clay Testing
T. W. GARVE
And Associates
69 W. Welsheimer Rd.
Columbus 14, Ohio

F. J. FORD
Representative—Engineer
Clay Working Machinery
Car Tunnel Kilns—Dryers
P.O. Box 537, Dallas, Texas
P.O. Box 395, San Francisco, California

THE BRITISH CLAYWORKER
(Established 1892)

Up-to-date articles and information on all phases of the Brick & Tile industry

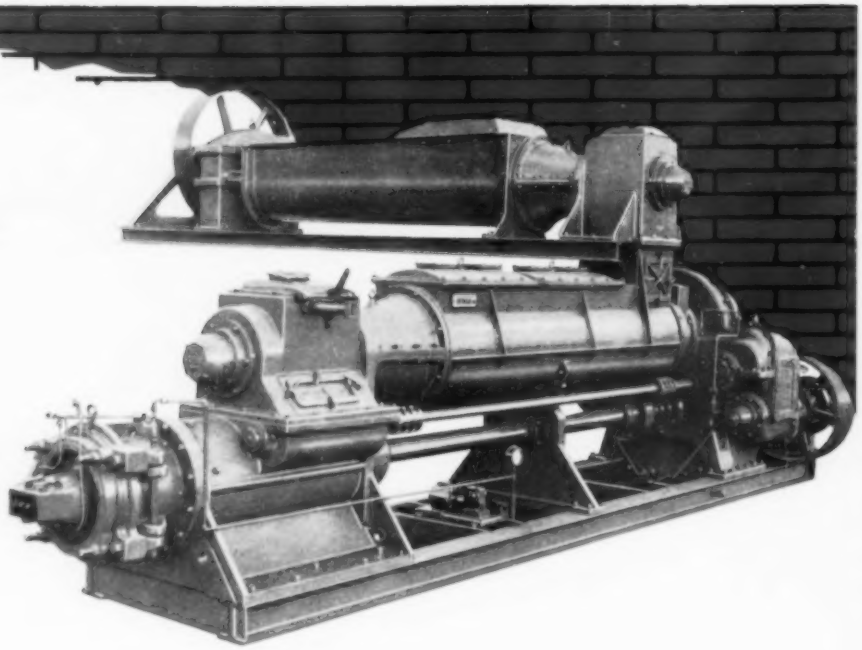
World wide circulation

Subscription £1.5.0 p. a. post free

Published monthly by
CLAY & BRICK PUBLICATIONS, LTD.
23 Tavistock Street
London, W.C. 2

Sell Your Used Equipment
in the Classified Columns
It Pays to Advertise
in
BRICK & CLAY RECORD

Will Vacuum Pugging Help You?



Our No. 60F Combined Separate Drive Deairing Machine may be built with the normally open pugmill totally enclosed to provide over 11 ft. x 30" ID vacuum pugmill with its own entirely individual drive. It also provides a secondary sealing auger and shredder assembly which affords additional working, compression, and shredding of the clay which is in itself very beneficial. Naturally the No. 60F Vacuum Extruder requires our standard No. 50F Pug-Sealer to provide adequate open-pugmill pugging and primary sealing and shredding and is shown in the above photograph. Separate control of the three component parts of this assembly is very important where production tonnage is high or where sewer pipe is being produced intermittently.

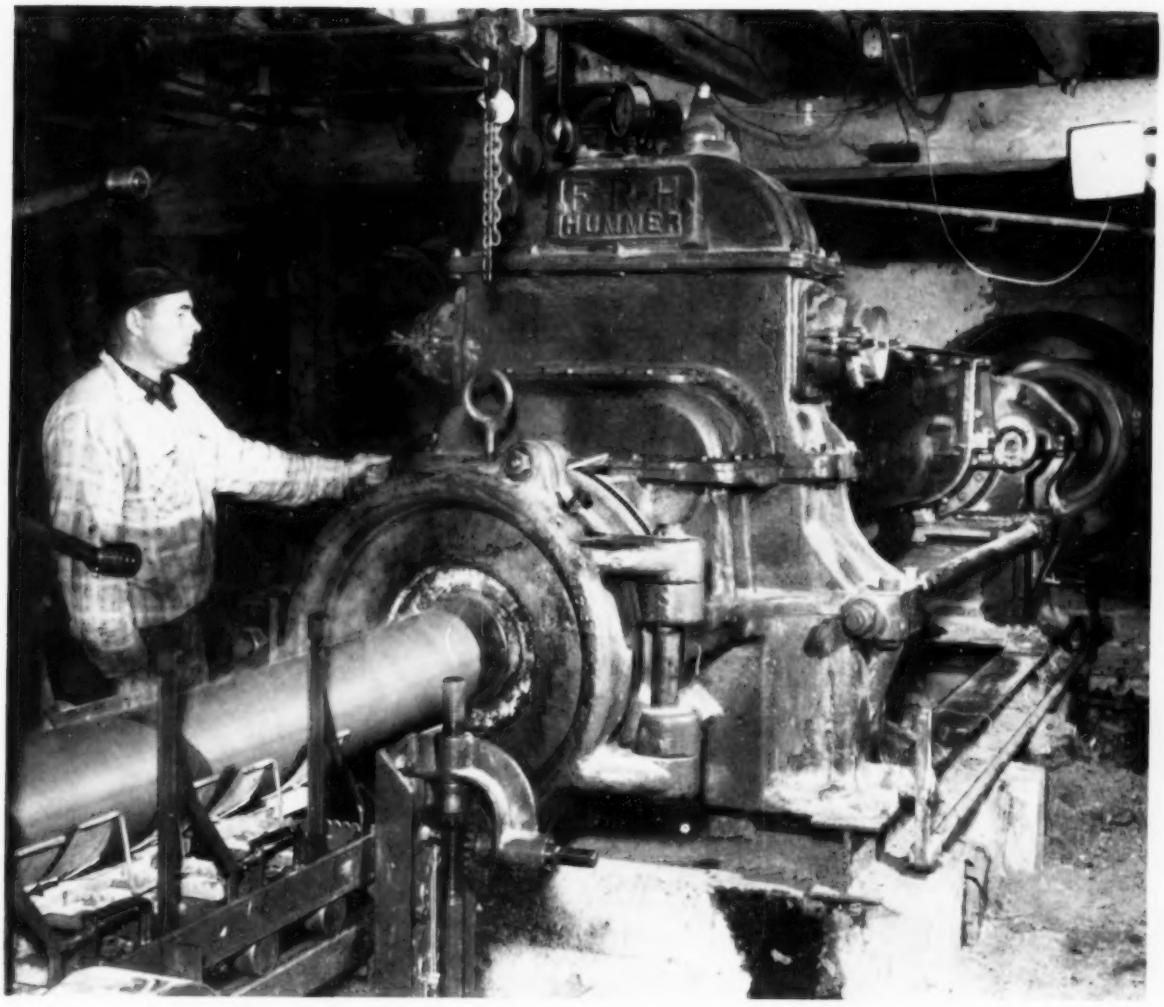
Of the twenty-six No. 60F Machines built to date, almost half of them are the No. 60FVEx illustrated above, and this 60FVEx-50FP/S combination is making up a growing proportion of the almost forty vacuum pugmill installations of all types we have made in the last few years.

Where a material has a narrow tempering range or takes water slowly, or where it lacks plasticity or there is a problem of mixing vastly dissimilar materials into an homogeneous uniformly deaired mass, the vacuum pugmill or the vacuum Pug-Sealer is of inestimable benefit.

Pacific Agents: Walter C. Stoll, 5028 Alhambra Avenue Los Angeles 32, Calif.

J. C. Steele & SONS, Inc., Statesville, N. C.

• THE BEST IN CLAY MACHINERY SINCE 1889 •



"Down-time on F-R-H equipment has been negligible . . . in almost 8 years of continuous operation"

Reports Inman Tile Co., Hartford City, Ind.

"I wouldn't trade our F-R-H Hummer for any tile de-airing machine I have seen within a 150-mile radius of our plant," says Mr. Neil Inman, owner of the Inman Tile Company, Hartford City, Indiana.

"Our F-R-H machine produces drain tile of various size—at rates up to 1200 units per hour. In steady use since 1951, this unit has almost entirely eliminated drying cracks—gives highly uniform extrusions that are also easier to handle.

"Best of all, our present de-airing machine—which replaced another F-R-H unit that had given us 40 years of dependable service—has required no major repairs of any kind, since the day it was purchased. "Our F-R-H equipment requires little or no maintenance and only the augers have required any actual servicing—in all that time." Another reason why the Indiana tile plant also installed a new F-R-H cutter this year.

Find out today how F-R-H equipment can improve product quality, assure uninterrupted production *for you*. Simply send a brief outline of your operations to The Fate-Root-Heath Company, Dept. B-1, Plymouth, Ohio.

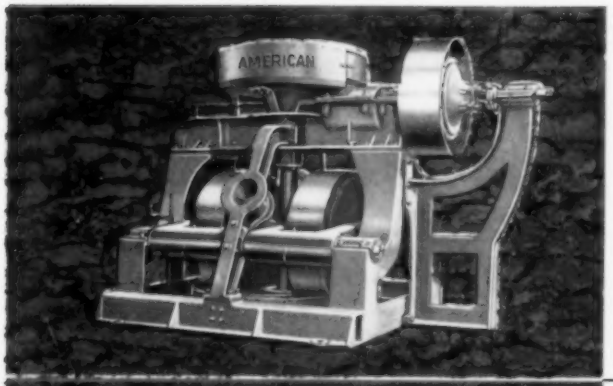
F-R-H

CERAMIC MACHINERY

FOR 100% OPERATING EFFICIENCY • ORDER GENUINE F-R-H REPLACEMENT PARTS DIRECTLY FROM THE FACTORY

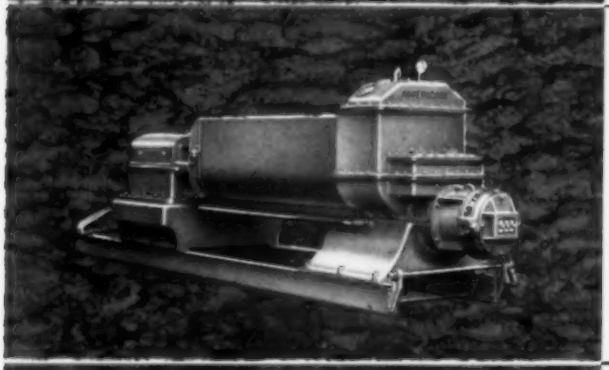
American

TRADITIONALLY THE BEST



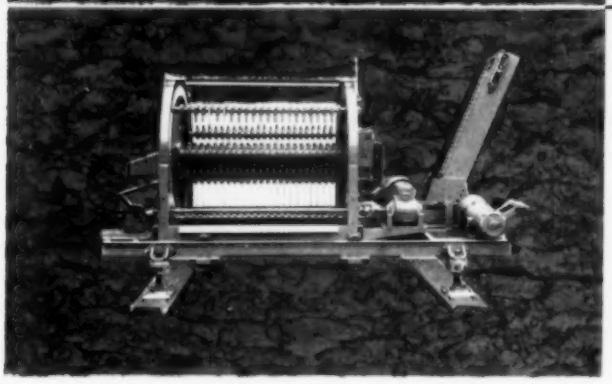
AMERICAN GRINDERS

Designed for volume clay production . . . eight models range from 15 to 80 tons per hour capacity. Materials can be handled wet or dry . . . no screen plates to clog or slow down production. Low initial investment . . . requires only a minimum of floor space . . . low power consumption . . . needs only a minimum of maintenance.



AMERICAN DE-AIRING COMBINED MACHINES

Machine handles building, fire or paving brick, also hollow block and drain tile. Capacity range is from 3,000 to 18,000 building brick per hour or 10 to 40 tons of hollow ware per hour. This capacity is governed by the clay used, size and kind of ware manufactured and by the operating speed.



AMERICAN AUTOMATIC ELECTRIC CUTTERS

Hourly capacity is 3,000 to 18,000 bricks . . . 23 standard bricks per cut. Every motion is electrically controlled to give precision accuracy of any brick or tile cut up to 14"x14". The cutter is a complete unit, there are no extras needed. Hinged measuring frame can be lifted to give necessary room to change die or front.

Before you buy, investigate the profit-producing features of "American" clay machines. A vast background of actual installation experience gained on jobs throughout the world enables "American" to design and outfit a complete plant from pit to kiln, or solve any phase of a brick or tile production problem.

American CLAY MACHINERY

A Division of HUBER-WARCO COMPANY
Marion, Ohio, U.S.A.

Plants in Marion and Bucyrus, Ohio
Cable Address: HUBARCO

OVER A CENTURY OF EXPERIENCE IN THE MANUFACTURE OF CLAY MACHINERY